```
=> fil hcapl; d que l23; d que l32; d que l34; d que l35
FILE 'HCAPLUS' ENTERED AT 11:24:22 ON 25 MAY 2004
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PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
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```


FILE COVERS 1907 - 25 May 2004 VOL 140 ISS 22
FILE LAST UPDATED: 24 May 2004 (20040524/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

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L5            1 SEA FILE=REGISTRY ABB=ON  POLYPROPYLENE/CN
L6       135388 SEA FILE=HCAPLUS ABB=ON  ADSORPTION/CT
L7       238184 SEA FILE=HCAPLUS ABB=ON  APPARATUS/CW
L8        11040 SEA FILE=HCAPLUS ABB=ON  TEST KITS/CT
L9         7516 SEA FILE=HCAPLUS ABB=ON  AMINATION/CT
L10        6594 SEA FILE=HCAPLUS ABB=ON  AMINO GROUP/CT
L11        8887 SEA FILE=HCAPLUS ABB=ON  CARBOXYL GROUP/CT
L12        2652 SEA FILE=HCAPLUS ABB=ON  SULFHYDRYL GROUP/CT
L13       19844 SEA FILE=HCAPLUS ABB=ON  "IMMOBILIZATION, MOLECULAR OR
                 CELLULAR"+OLD,NT/CT
L14       49184 SEA FILE=HCAPLUS ABB=ON  NUCLEIC ACIDS/CT
L15      116674 SEA FILE=HCAPLUS ABB=ON  PEPTIDES/CT
L16        1797 SEA FILE=HCAPLUS ABB=ON  POLYNUCLEOTIDES/CT
L17         187 SEA FILE=HCAPLUS ABB=ON  POLYPEPTIDES/CT
L18      718903 SEA FILE=HCAPLUS ABB=ON  PROTEINS/CT
L19        7671 SEA FILE=HCAPLUS ABB=ON  BIOPOLYMERS/CT
L20         331 SEA FILE=HCAPLUS ABB=ON  L5(L)(AMINAT? OR AMINO)
L21       33366 SEA FILE=HCAPLUS ABB=ON  (L14 OR L15 OR L16 OR L17 OR L18 OR
                 L19)(L)ANT/RL  — ANT/RL = Role - analyte
L23           3 SEA FILE=HCAPLUS ABB=ON  L6 AND L13 AND (L7 OR L8) AND ((L9 OR
                 L10 OR L11 OR L12) OR L20) AND L21
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L6       135388 SEA FILE=HCAPLUS ABB=ON  ADSORPTION/CT
L9         7516 SEA FILE=HCAPLUS ABB=ON  AMINATION/CT
L10        6594 SEA FILE=HCAPLUS ABB=ON  AMINO GROUP/CT
L11        8887 SEA FILE=HCAPLUS ABB=ON  CARBOXYL GROUP/CT
L12        2652 SEA FILE=HCAPLUS ABB=ON  SULFHYDRYL GROUP/CT
L13       19844 SEA FILE=HCAPLUS ABB=ON  "IMMOBILIZATION, MOLECULAR OR
                 CELLULAR"+OLD,NT/CT
L14       49184 SEA FILE=HCAPLUS ABB=ON  NUCLEIC ACIDS/CT
L15      116674 SEA FILE=HCAPLUS ABB=ON  PEPTIDES/CT
L16        1797 SEA FILE=HCAPLUS ABB=ON  POLYNUCLEOTIDES/CT
L17         187 SEA FILE=HCAPLUS ABB=ON  POLYPEPTIDES/CT
L18      718903 SEA FILE=HCAPLUS ABB=ON  PROTEINS/CT
L19        7671 SEA FILE=HCAPLUS ABB=ON  BIOPOLYMERS/CT
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L21       33366 SEA FILE=HCAPLUS ABB=ON  (L14 OR L15 OR L16 OR L17 OR L18 OR
                L19)(L)ANT/RL
L30        1081 SEA FILE=HCAPLUS ABB=ON  (L9 OR L10 OR L11 OR L12)(L)(MODIF?
                OR SUBSTRATE#)
L32           7 SEA FILE=HCAPLUS ABB=ON  (L13 OR L6) AND L30 AND L21


L5            1 SEA FILE=REGISTRY ABB=ON  POLYPROPYLENE/CN
L6       135388 SEA FILE=HCAPLUS ABB=ON  ADSORPTION/CT
L7       238184 SEA FILE=HCAPLUS ABB=ON  APPARATUS/CW
L8        11040 SEA FILE=HCAPLUS ABB=ON  TEST KITS/CT
L9         7516 SEA FILE=HCAPLUS ABB=ON  AMINATION/CT
L10        6594 SEA FILE=HCAPLUS ABB=ON  AMINO GROUP/CT
L11        8887 SEA FILE=HCAPLUS ABB=ON  CARBOXYL GROUP/CT
L12        2652 SEA FILE=HCAPLUS ABB=ON  SULFHYDRYL GROUP/CT
L13       19844 SEA FILE=HCAPLUS ABB=ON  "IMMOBILIZATION, MOLECULAR OR
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L14       49184 SEA FILE=HCAPLUS ABB=ON  NUCLEIC ACIDS/CT
L15      116674 SEA FILE=HCAPLUS ABB=ON  PEPTIDES/CT
L16        1797 SEA FILE=HCAPLUS ABB=ON  POLYNUCLEOTIDES/CT
L17         187 SEA FILE=HCAPLUS ABB=ON  POLYPEPTIDES/CT
L18      718903 SEA FILE=HCAPLUS ABB=ON  PROTEINS/CT
L19        7671 SEA FILE=HCAPLUS ABB=ON  BIOPOLYMERS/CT
L20         331 SEA FILE=HCAPLUS ABB=ON  L5(L)(AMINAT? OR AMINO)
L21       33366 SEA FILE=HCAPLUS ABB=ON  (L14 OR L15 OR L16 OR L17 OR L18 OR
                L19)(L)ANT/RL
L22          31 SEA FILE=HCAPLUS ABB=ON  (L6 OR L13) AND (L7 OR L8) AND ((L9
                OR L10 OR L11 OR L12) OR L20) AND L21
L24     1128358 SEA FILE=HCAPLUS ABB=ON  (SURFACE# OR SOLID)/OBI
L25      801706 SEA FILE=HCAPLUS ABB=ON  COMPLEX?/OBI
L34           4 SEA FILE=HCAPLUS ABB=ON  L25 AND L22 AND L24


L5            1 SEA FILE=REGISTRY ABB=ON  POLYPROPYLENE/CN
L6       135388 SEA FILE=HCAPLUS ABB=ON  ADSORPTION/CT
L7       238184 SEA FILE=HCAPLUS ABB=ON  APPARATUS/CW
L8        11040 SEA FILE=HCAPLUS ABB=ON  TEST KITS/CT
L9         7516 SEA FILE=HCAPLUS ABB=ON  AMINATION/CT
L10        6594 SEA FILE=HCAPLUS ABB=ON  AMINO GROUP/CT
L11        8887 SEA FILE=HCAPLUS ABB=ON  CARBOXYL GROUP/CT
L12        2652 SEA FILE=HCAPLUS ABB=ON  SULFHYDRYL GROUP/CT
L13       19844 SEA FILE=HCAPLUS ABB=ON  "IMMOBILIZATION, MOLECULAR OR
                CELLULAR"+OLD,NT/CT
L14       49184 SEA FILE=HCAPLUS ABB=ON  NUCLEIC ACIDS/CT
L15      116674 SEA FILE=HCAPLUS ABB=ON  PEPTIDES/CT
L16        1797 SEA FILE=HCAPLUS ABB=ON  POLYNUCLEOTIDES/CT
L17         187 SEA FILE=HCAPLUS ABB=ON  POLYPEPTIDES/CT
L18      718903 SEA FILE=HCAPLUS ABB=ON  PROTEINS/CT
L19        7671 SEA FILE=HCAPLUS ABB=ON  BIOPOLYMERS/CT
L20         331 SEA FILE=HCAPLUS ABB=ON  L5(L)(AMINAT? OR AMINO)
L21       33366 SEA FILE=HCAPLUS ABB=ON  (L14 OR L15 OR L16 OR L17 OR L18 OR
                L19)(L)ANT/RL
L22          31 SEA FILE=HCAPLUS ABB=ON  (L6 OR L13) AND (L7 OR L8) AND ((L9
                OR L10 OR L11 OR L12) OR L20) AND L21
L26       85111 SEA FILE=HCAPLUS ABB=ON  PROBE#/OBI
L27       91289 SEA FILE=HCAPLUS ABB=ON  TARGET?/OBI
L35           2 SEA FILE=HCAPLUS ABB=ON  L26 AND L27 AND L22

=> s l23 or l32 or l34 or l35
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L84          13 L23 OR L32 OR L34 OR L35

=> fil uspatf; d que 155; d que 157

FILE 'USPATFULL' ENTERED AT 11:24:23 ON 25 MAY 2004
CA INDEXING COPYRIGHT (C) 2004 AMERICAN CHEMICAL SOCIETY (ACS)

FILE COVERS 1971 TO PATENT PUBLICATION DATE: 25 May 2004 (20040525/PD)
FILE LAST UPDATED: 25 May 2004 (20040525/ED)
HIGHEST GRANTED PATENT NUMBER: US6742188
HIGHEST APPLICATION PUBLICATION NUMBER: US2004098779
CA INDEXING IS CURRENT THROUGH 25 May 2004 (20040525/UPCA)
ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 25 May 2004 (20040525/PD)
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Apr 2004
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Apr 2004

>>> USPAT2 is now available. USPATFULL contains full text of the      <<<
>>> original, i.e., the earliest published granted patents or        <<<
>>> applications. USPAT2 contains full text of the latest US         <<<
>>> publications, starting in 2001, for the inventions covered in    <<<
>>> USPATFULL. A USPATFULL record contains not only the original     <<<
>>> published document but also a list of any subsequent             <<<
>>> publications. The publication number, patent kind code, and      <<<
>>> publication date for all the US publications for an invention    <<<
>>> are displayed in the PI (Patent Information) field of USPATFULL  <<<
>>> records and may be searched in standard search fields, e.g., /PN, <<<
>>> /PK, etc.                                                        <<<

>>> USPATFULL and USPAT2 can be accessed and searched together       <<<
>>> through the new cluster USPATALL. Type FILE USPATALL to          <<<
>>> enter this cluster.                                              <<<
>>>                                                                  <<<
>>> Use USPATALL when searching terms such as patent assignees,      <<<
>>> classifications, or claims, that may potentially change from     <<<
>>> the earliest to the latest publication.                          <<<

This file contains CAS Registry Numbers for easy and accurate
substance identification.


L5             1 SEA FILE=REGISTRY ABB=ON  POLYPROPYLENE/CN
L36         2034 SEA FILE=USPATFULL ABB=ON  ADSORPTION/CT
L37        31394 SEA FILE=USPATFULL ABB=ON  APPARATUS/IT
L38         5691 SEA FILE=USPATFULL ABB=ON  TEST KITS/CT
L39          601 SEA FILE=USPATFULL ABB=ON  AMINATION/CT
L40          514 SEA FILE=USPATFULL ABB=ON  AMINO GROUP/CT
L41          409 SEA FILE=USPATFULL ABB=ON  CARBOXYL GROUP/CT
L42          343 SEA FILE=USPATFULL ABB=ON  SULFHYDRYL GROUP/CT
L43          851 SEA FILE=USPATFULL ABB=ON  "IMMOBILIZATION, MOLECULAR OR
                 CELLULAR"/CT
L45         7565 SEA FILE=USPATFULL ABB=ON  NUCLEIC ACIDS/CT
L46        16448 SEA FILE=USPATFULL ABB=ON  PEPTIDES/CT
L47         1239 SEA FILE=USPATFULL ABB=ON  POLYNUCLEOTIDES/CT
L48        36223 SEA FILE=USPATFULL ABB=ON  PROTEINS/CT
L49         1029 SEA FILE=USPATFULL ABB=ON  BIOPOLYMERS/CT
L50           35 SEA FILE=USPATFULL ABB=ON  L5(L)(AMINAT? OR AMINO)/IT
L55            3 SEA FILE=USPATFULL ABB=ON  L36 AND L43 AND ((L39 OR L40 OR L41
                 OR L42) OR L50) AND (L45 OR L46 OR L47 OR L48 OR L49) AND (L37
                 OR L38)
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L5            1 SEA FILE=REGISTRY ABB=ON  POLYPROPYLENE/CN
L36        2034 SEA FILE=USPATFULL ABB=ON  ADSORPTION/CT
L37       31394 SEA FILE=USPATFULL ABB=ON  APPARATUS/IT
L38        5691 SEA FILE=USPATFULL ABB=ON  TEST KITS/CT
L39         601 SEA FILE=USPATFULL ABB=ON  AMINATION/CT
L40         514 SEA FILE=USPATFULL ABB=ON  AMINO GROUP/CT
L41         409 SEA FILE=USPATFULL ABB=ON  CARBOXYL GROUP/CT
L42         343 SEA FILE=USPATFULL ABB=ON  SULFHYDRYL GROUP/CT
L43         851 SEA FILE=USPATFULL ABB=ON  "IMMOBILIZATION, MOLECULAR OR
                CELLULAR"/CT
L45        7565 SEA FILE=USPATFULL ABB=ON  NUCLEIC ACIDS/CT
L46       16448 SEA FILE=USPATFULL ABB=ON  PEPTIDES/CT
L47        1239 SEA FILE=USPATFULL ABB=ON  POLYNUCLEOTIDES/CT
L48       36223 SEA FILE=USPATFULL ABB=ON  PROTEINS/CT
L49        1029 SEA FILE=USPATFULL ABB=ON  BIOPOLYMERS/CT
L50          35 SEA FILE=USPATFULL ABB=ON  L5(L)(AMINAT? OR AMINO)/IT
L52       23485 SEA FILE=USPATFULL ABB=ON  COMPLEX?/IT
L53       10875 SEA FILE=USPATFULL ABB=ON  PROBE#/IT
L54        7739 SEA FILE=USPATFULL ABB=ON  TARGET?/IT
L57           7 SEA FILE=USPATFULL ABB=ON  (L36 OR L43) AND ((L39 OR L40 OR
                L41 OR L42) OR L50) AND (L45 OR L46 OR L47 OR L48 OR L49) AND
                (L37 OR L38) AND (L52 OR L53 OR L54)


=> s l55 or l57

L85           8 L55 OR L57

=> fil pascal jic biotechno biotechds biosis wpids

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COPYRIGHT (C) 2004 THOMSON DERWENT AND INSTITUTE FOR SCIENTIFIC INFORMATION

FILE 'BIOSIS' ENTERED AT 11:24:25 ON 25 MAY 2004
COPYRIGHT (C) 2004 BIOLOGICAL ABSTRACTS INC.(R)

FILE 'WPIDS' ENTERED AT 11:24:25 ON 25 MAY 2004
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=> d que l70; d que l78

L58        52118 SEA NUCLEIC ACIDS
L59       294126 SEA POLY(W)(PEPTIDE# OR NUCLEOTIDE#) OR POLYNUCLEOTIDE# OR
                 POLYPEPTIDE#
L60      3387383 SEA PROTEIN#
L61        13264 SEA BIOPOLYMER# OR BIO POLYMER#
L63            1 SEA AMINOPOLYPROPYLENE
L70            1 SEA (L58 OR L59 OR L60 OR L61) AND L63
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L58 52118 SEA NUCLEIC ACIDS
L7 [illegible] L60 OR L61) AND L77 AND L66 AND L74 AND

=>

L8[illegible]

=>
FI[illegible]
US[illegible]
PL[illegible]
CO[illegible]

Please lift to see query

FILE 'PASCAL' ENTERED AT 11:24:42 ON 25 MAY 2004

FILE 'JICST-EPLUS' ENTERED AT 11:24:42 ON 25 MAY 2004

FILE 'BIOTECHNO' ENTERED AT 11:24:42 ON 25 MAY 2004

FILE 'BIOTECHDS' ENTERED AT 11:24:42 ON 25 MAY 2004

FILE 'BIOSIS' ENTERED AT 11:24:42 ON 25 MAY 2004

FILE 'WPIDS' ENTERED AT 11:24:42 ON 25 MAY 2004

FILE 'USPATFULL' ENTERED AT 11:24:42 ON 25 MAY 2004

PROCESSING COMPLETED FOR L84
PROCESSING COMPLETED FOR L86
PROCESSING COMPLETED FOR L85
L87 42 DUP REM L84 L86 L85 (7 DUPLICATES REMOVED)
ANSWERS '1-13' FROM FILE HCAPLUS
ANSWERS '14-16' FROM FILE PASCAL
ANSWERS '17-19' FROM FILE JICST-EPLUS
ANSWERS '20-21' FROM FILE BIOTECHNO
ANSWERS '22-30' FROM FILE BIOTECHDS
ANSWER '31' FROM FILE BIOSIS
ANSWERS '32-37' FROM FILE WPIDS
ANSWERS '38-42' FROM FILE USPATFULL

=> d ibib ed ab hitrn 1-42; fil hom

L87 ANSWER 1 OF 42 HCAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 1
ACCESSION NUMBER: 2003:282035 HCAPLUS
DOCUMENT NUMBER: 138:300113
TITLE: Label-free methods for performing assays using a colorimetric resonant reflectance optical biosensor
INVENTOR(S): Lin, Bo; Pepper, Jane; Cunningham, Brian T.; Gerstenmaier, John; Li, Peter; Qiu, Jean; Pien, Homer

PATENT ASSIGNEE(S): SRU Biosystems LLC, USA
SOURCE: U.S. Pat. Appl. Publ., 65 pp., Cont.-in-part of U.S. Ser. No. 227,908.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 14
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003068657	A1	20030410	US 2002-237641	20020909
US 2002127565	A1	20020912	US 2001-930352	20010815
US 2003210396	A1	20031113	US 2001-1069	20011030
US 2003027327	A1	20030206	US 2002-58626	20020128
US 2003027328	A1	20030206	US 2002-59060	20020128
US 2003032039	A1	20030213	US 2002-180647	20020626
US 2003059855	A1	20030327	US 2002-180374	20020626
US 2003113766	A1	20030619	US 2002-227908	20020826

PRIORITY APPLN. INFO.:

US 2000-244312P	P	20001030
US 2001-283314P	P	20010412
US 2001-303028P	P	20010703
US 2001-930352	A2	20010815
US 2002-58626	A2	20020128
US 2002-59060	A2	20020128
US 2002-180374	A2	20020626
US 2002-180647	A2	20020626
US 2002-227908	A2	20020826
US 2001-310399P	P	20010806
JP 2001-299942	A	20010928
US 2002-52626	A2	20020117

ED Entered STN: 11 Apr 2003
AB Methods are provided for detecting biomol. interactions. The use of labels is not required and the methods can be performed in a high-throughput manner. The invention also relates to optical devices. Biosensors were used to detect protein-protein interactions, DNA-DNA interactions, protein-DNA interactions, growth of cells, interleukin 1 release from macrophages, etc.

L87 ANSWER 2 OF 42 HCAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 2
ACCESSION NUMBER: 2003:174333 HCAPLUS
DOCUMENT NUMBER: 138:201292
TITLE: Analysis using a distributed sample
INVENTOR(S): Matson, Robert S.
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 11 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003044799	A1	20030306	US 2001-945145	20010831

PRIORITY APPLN. INFO.:

US 2001-945145	20010831

ED Entered STN: 07 Mar 2003
AB The present invention is directed to the prodn. of a sample microarray for use in detecting one or more target biopolymers in the sample. The sample microarray of this invention is formed by distributing equiv. amts. of a single sample at discrete, spatially defined locations on a substrate. Each site in the microarray, thus, has the same compn. of target

biopolymers. The microarray is then interrogated by one or more probes specific for one or more the target biopolymers.

L87 ANSWER 3 OF 42 HCAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 3
ACCESSION NUMBER: 2002:332378 HCAPLUS
DOCUMENT NUMBER: 136:337314
TITLE: Immobilization of biopolymers to aminated substrates by direct adsorption and assay article so prepared for use in biopolymer detection
INVENTOR(S): Rampal, Jang B.; Matson, Robert S.
PATENT ASSIGNEE(S): Beckman Coulter, Inc., USA
SOURCE: PCT Int. Appl., 27 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002034950	A2	20020502	WO 2001-US43046	20011022
WO 2002034950	A3	20030227		

W: JP
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR
EP 1337665 A2 20030827 EP 2001-988787 20011022
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR

PRIORITY APPLN. INFO.: US 2000-604701 A 20001023
WO 2001-US43046 W 20011022

ED Entered STN: 03 May 2002
AB An assay article for detection of biopolymers contained in a sample is described. The assay article includes a substrate and a biopolymer directly adsorbed on the surface of the substrate. A plurality of biopolymers may be adsorbed on the surface of the substrate to form an array. Also disclosed is a method of making the assay article. In the preferred method, an aminated polypropylene substrate is used. A biopolymer is contacted with the aminated substrate under a condition sufficient for direct adsorption of the biopolymer on the surface of the substrate. A method of detecting a target biopolymer contained in a sample is also disclosed. In this method, a substrate is contacted with either a probe or target biopolymer under a condition sufficient for a direct adsorption of either the probe or target biopolymer on the substrate to form a probe assay article or a target assay article. Then, the probe assay article is contacted with the target biopolymer, or the target assay article is contacted with the probe biopolymer under a condition that allows the formation of a probe-target complex. Finally, the complex is detected and the presence of the complex is used as a measurement for the presence or the amt. of the biopolymer target contained in the sample. Arrays of cDNA and of human IgG were made on aminated polypropylene slides and films, resp., and used in hybridization and immunoassays.
IT **9003-07-0**, Polypropylene **9003-07-0D**, Polypropylene, **aminated 9003-07-0D**, Polypropylene, **amino**-modified
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(as substrate; immobilization of biopolymers to **aminated** substrates by direct adsorption and assay article so prepd. for use in biopolymer detection)

L87 ANSWER 4 OF 42 HCAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 5

ACCESSION NUMBER: 2001:863434 HCAPLUS
DOCUMENT NUMBER: 136:2484
TITLE: Mass spectrometric detection of polypeptides
INVENTOR(S): Little, Daniel; Koster, Hubert; Higgins, G. Scott; Lough, David
PATENT ASSIGNEE(S): Sequenom, Inc., USA
SOURCE: U.S., 50 pp., Cont.-in-part of U.S. Ser. No. 922,201.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6322970	B1	20011127	US 1998-146054	19980902
US 6207370	B1	20010327	US 1997-922201	19970902
EP 1296143	A2	20030326	EP 2002-25544	19980902
EP 1296143	A3	20040204		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL				
US 6387628	B1	20020514	US 2000-664977	20000918
US 2003003465	A1	20030102	US 2001-7557	20011106

PRIORITY APPLN. INFO.:
US 1997-922201 A2 19970902
EP 1998-943528 A3 19980902
US 1998-146054 A3 19980902
US 2000-664977 A1 20000918

ED Entered STN: 29 Nov 2001
AB A process for detg. the identity of a target polypeptide using mass spectroscopy is provided. Depending on the target polypeptide to be identified, a process as disclosed can be used, for example, to diagnose a genetic disease or chromosomal abnormality, a predisposition to a disease or condition, or infection by a pathogenic organism; or for detg. identity or heredity. Kits for performing the disclosed processes also are provided. A process for obtaining information on a sequence of a target nucleic acid mol. by detg. the identity of a polypeptide encoded by the nucleic acid mol. comprises: (a) prepg. the encoded polypeptide from a target nucleic acid mol. by in vitro translation, or by in vitro transcription followed by translation, of the target nucleic acid mol.; (b) detg. the mol. mass of the encoded polypeptide by mass spectrometry; and (c) detg. the identity of the polypeptide by comparing the mol. mass of the polypeptide with the mol. mass of a corresponding known polypeptide, thereby obtaining information on a sequence of nucleotides in the target nucleic acid mol.
REFERENCE COUNT: 269 THERE ARE 269 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L87 ANSWER 5 OF 42 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2004:41216 HCAPLUS
DOCUMENT NUMBER: 140:90328
TITLE: Nanoparticle polyanion conjugates and methods of use thereof in detecting analytes
INVENTOR(S): Storhoff, James J.; Letsinger, Robert L.; Hagenow, Susan R.
PATENT ASSIGNEE(S): Nanosphere Inc., USA
SOURCE: PCT Int. Appl., 36 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004004647	A2	20040115	WO 2003-US21021	20030702
WO 2004004647	A3	20040325		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

US 2004053222	A1	20040318	US 2003-612422	20030702

PRIORITY APPLN. INFO.: US 2002-393255P P 20020702

ED Entered STN: 18 Jan 2004

AB This invention provides polyanionic polymer conjugates contg. non-nucleotide polyanionic polymers that are useful in detecting target analytes such as proteins or small mols. The invention also provides nanoparticle bound to polyanionic polymer conjugates and methods of prepn. and use thereof. The polyanionic polymer conjugates have the formula: L-O[PO2-O-Z-O]n-PO2-O-X (I), wherein n ranges from 1 to 200; L represents a moiety comprising a functional group for attaching the polyanion polymer to the nanoparticle surface; Z represents a bridging group, and X represents Q, X', or -Q-X',, wherein Q represents a functional group for attaching a recognition probe to the polyanion polymer, and X' represents a recognition probe. I, prepd. using std. phosphoramidite chem., was conjugated to 30 nm diam. gold particles and used to detect streptavidin.

L87 ANSWER 6 OF 42 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2004:20970 HCAPLUS
DOCUMENT NUMBER: 140:90306
TITLE: MALDI-TOF mass spectrometric analysis of a biomolecule immobilized on a biochip and applications to nucleic acid sequence analysis
INVENTOR(S): Okamoto, Tadashi
PATENT ASSIGNEE(S): Canon Kabushiki Kaisha, Japan
SOURCE: PCT Int. Appl., 81 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004003539	A1	20040108	WO 2003-JP8197	20030627

W: CN, KR, US

RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR

JP 2004037128	A2	20040205	JP 2002-191535	20020628

PRIORITY APPLN. INFO.: JP 2002-191535 A 20020628
OTHER SOURCE(S): MARPAT 140:90306
ED Entered STN: 11 Jan 2004

AB The present invention relates to a method of analyzing a substance fixed on a substrate by MALDI-TOF mass spectrometry and, more specifically, to a method of analyzing a plurality of bio-related substances fixed on a so-called biochip in a matrix form, a biochip on which bio-related substances are fixed in a way suitable for the application of the anal.

method, and a method of analyzing a substance which interacts with the bio-related substance fixed on the biochip. When the substance is to be bonded on the substrate, MALDI-TOF MS anal. can be utilized by providing a partial structure to be disconnected by light in the bonded portion and selectively disconnecting the partial structure by light having a predetd. wavelength to bring the substance in an unfixed state. The present invention also relates to a method of detg. a nucleic acid base sequence, and in particular, to a method of specifying the kind of one base added to a sequence primer during an extension reaction in base sequence anal. based on a dideoxy method, i.e., a method of detg. a nucleic acid base sequence.

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L87 ANSWER 7 OF 42 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2004:119872 HCAPLUS
DOCUMENT NUMBER: 140:160151
TITLE: Immobilization of biomolecules on substrates for analytical use by attaching them to adsorbed bridging biomolecules
INVENTOR(S): Matson, Robert S.; Rampal, Jang B.
PATENT ASSIGNEE(S): Beckman Coulter, Inc., USA
SOURCE: U.S. Pat. Appl. Publ., 13 pp., Cont.-in-part of U.S. Ser. No. 694,701.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004029156	A1	20040212	US 2003-427658	20030501

PRIORITY APPLN. INFO.: US 2000-694701 A2 20001023
ED Entered STN: 13 Feb 2004
AB An assay article for detection first biomols. contained in a sample is described. The assay article includes a substrate having a modified surface and a first biomol. directly adsorbed and immobilized on the modified surface of the substrate without linking moieties. A second biomol. is bound to or adsorbed on the first biomol. Also disclosed is a method of making the assay article. A first biomol. (other than an adhesive protein) is contacted with a modified surface of a substrate. The substrate is dried to directly adsorb the first biomol. and immobilize it on the modified surface of the substrate without addnl. fixing steps to form an activated substrate. Then, a second biomol. is contacted with the activated substrate under conditions sufficient for the first biomol. to bind the second biomol.

L87 ANSWER 8 OF 42 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:875484 HCAPLUS
DOCUMENT NUMBER: 139:361233
TITLE: Bis-transition-metal-chelate-probes
INVENTOR(S): Ebright, Richard H.; Ebright, Yon W.
PATENT ASSIGNEE(S): Rutgers, the State of University of New Jersey, USA
SOURCE: PCT Int. Appl., 80 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

WO 2003091689	A2	20031106	WO 2002-US36180	20021112

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

US 2004096887	A1	20040520	US 2003-665227	20030917

PRIORITY APPLN. INFO.:
US 2002-367775P P 20020328
US 2002-410267P P 20020913
WO 2002-US36180 A2 20021112

OTHER SOURCE(S): MARPAT 139:361233

ED Entered STN: 07 Nov 2003

AB A probe for labeling a target material is provided including two transition-metal chelates and detectable group. The probe has the general structural formula (I) wherein: (a) Y and Y' are each a transition metal, (b) R1 and R1 are each independently CH(COO-), CH(COOH), or absent; (c)R2 and R2 are linkers each having a length of from about 3.0 to about 20 A; and (d) X is a detectable group. The linkers may be linear or branched, may contain arom. moieties, and may optionally be further substituted. Methods of use of the probe in detecting and analyzing target materials of interest also are provided.

L87 ANSWER 9 OF 42 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2003:434814 HCAPLUS
DOCUMENT NUMBER: 139:16839
TITLE: High surface area substrates for microarrays and methods to make same
INVENTOR(S): Agrawal, Anoop; Cronin, John P.; Tonazzi, Juan Carlos Lopez; Goodyear, A. Gordon; Lecompte, Robert C.; Hogan, Michael E.; Galbraith, David W.
PATENT ASSIGNEE(S): Biomicroarrays, Inc., USA
SOURCE: PCT Int. Appl., 118 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003046508	A2	20030605	WO 2002-US35952	20021108
WO 2003046508	A3	20040408		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

US 2003148401	A1	20030807	US 2002-291467	20021108

PRIORITY APPLN. INFO.:
US 2001-345848P P 20011109

US 2002-361588P P 20020302
US 2002-393044P P 20020701

ED Entered STN: 06 Jun 2003
AB The present invention is directed to a substrate having a plurality of microfeatures that provide a high surface area and are open to provide ready access to fluids and components therein. Methods of making the high surface area substrates are described and include generating microfeatures and/or microstructures on the surface of the substrate.

L87 ANSWER 10 OF 42 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:609944 HCAPLUS
DOCUMENT NUMBER: 139:160746
TITLE: Methods for detection and quantitation of nucleic acids for diagnosis of genetic diseases and infections and forensic, food and environmental screening
INVENTOR(S): Vision, Todd J.; Carmon, Amber; Thannhauser, Theodore W.; Kresovich, Stephen; Mitchell, Sharon E.; Muller, Uwe R.
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 24 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003148284	A1	20030807	US 2001-23337	20011217

PRIORITY APPLN. INFO.: US 2001-23337 20011217
ED Entered STN: 08 Aug 2003
AB Methods for detection and quantitation of nucleic acids for diagnosis of genetic diseases and infections as well as forensic, food, feed and environmental screening are provided. An immobilized oligonucleotide primer is extended using a polymerase, yielding an extension product that can be used in a detection assay. The assay is useful for detecting the presence of a target nucleic acid mol. in a sample and quantifying the amt. of the target nucleic acid mol. in the sample.

L87 ANSWER 11 OF 42 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:539935 HCAPLUS
DOCUMENT NUMBER: 137:90548
TITLE: Polymer brushes for immobilizing molecules to a surface or substrate having improved stability
INVENTOR(S): Klaerner, Gerrit; Benoit, Didier; Charmot, Dominique; Nomula, Srinivas; Piotti, Marcelo E.; Mazzola, Laura T.
PATENT ASSIGNEE(S): Symyx Technologies, Inc., USA
SOURCE: PCT Int. Appl., 162 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002056021	A2	20020718	WO 2002-US746	20020110
WO 2002056021	A3	20030918		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,

LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

US 2003108879 A1 20030612 US 2002-43394 20020110
PRIORITY APPLN. INFO.: US 2001-271692P P 20010110
ED Entered STN: 19 Jul 2002
AB The invention concerns sensors for detg. the presence and concn. of bio-mols. in a biol. sample in the form of polymer brushes, which comprise a substrate having a surface modified with a hydrophobic polymer segment, attached to which is a water-dispersible or water-sol. polymer segment having functional groups that bind probes. The method of synthesis of such sensors preferably includes use of controlled free radical polymn. techniques, which allows for controlled architecture polymers to modify the surface of the substrate, and the use of monomers possessing functional groups which do not require activation prior to probe attachment. In this manner functional groups in the polymer chain are removed from the surface, which allows for soln. chem. to be more realistically reproduced with the benefits of a solid bound probe.

L87 ANSWER 12 OF 42 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:449911 HCAPLUS
DOCUMENT NUMBER: 137:28997
TITLE: Isothermal amplification and sequencing of nucleic acids immobilized on a solid support
INVENTOR(S): Mayer, Pascal
PATENT ASSIGNEE(S): Applied Research Systems Ars Holding N.V., Neth. Antilles
SOURCE: PCT Int. Appl., 61 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002046456	A1	20020613	WO 2001-EP14369	20011207
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1213359	A1	20020612	EP 2000-127011	20001208
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
AU 2002019161	A5	20020618	AU 2002-19161	20011207
EE 200300256	A	20030815	EE 2003-256	20011207
EP 1339877	A1	20030903	EP 2001-999663	20011207
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
BR 2001016033	A	20031007	BR 2001-16033	20011207
NO 2003002455	A	20030805	NO 2003-2455	20030528
US 2004096853	A1	20040520	US 2003-433965	20031103

PRIORITY APPLN. INFO.: EP 2000-127011 A 20001208

WO 2001-EP14369 W 20011207

ED Entered STN: 14 Jun 2002
AB Methods for the isothermal amplification of nucleic acid by the means of a solid support are disclosed. These methods are useful for applications needing high throughput, in particular nucleic acids sequencing. The invention relates to methods of immobilization of nucleic acid template and primer to solid supports. The invention also relates to methods of releasing one or more immobilized nucleic acid strands with chem., optical, phys. or enzymic means. The invention relates to nucleic acid sequencing and re-sequencing in the fields of genomics, pharmacogenomics, drug discovery, food characterization, genotyping, diagnostics, gene expression monitoring, genetic diversity profiling, whole genome sequencing and polymorphism discovery, or any other applications involving the amplification of nucleic acids.
REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L87 ANSWER 13 OF 42 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2001:924099 HCAPLUS
DOCUMENT NUMBER: 136:50669
TITLE: Selective labeling and isolation of phosphopeptides and applications to proteome analysis
INVENTOR(S): Aebersold, Ruedi; Zhou, Hullin
PATENT ASSIGNEE(S): University of Washington, USA
SOURCE: PCT Int. Appl., 59 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001096869	A1	20011220	WO 2001-US18988	20010612
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
EP 1295123	A1	20030326	EP 2001-944486	20010612
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2004503780	T2	20040205	JP 2002-510947	20010612
US 2002049307	A1	20020425	US 2001-880713	20011018

PRIORITY APPLN. INFO.: US 2000-210972P P 20000612
WO 2001-US18988 W 20010612

ED Entered STN: 21 Dec 2001
AB A method for selective labeling of phosphate groups in natural and synthetic oligomers and polymers in the presence of chem. related groups such as carboxylic acid groups. The method is specifically applicable to biol. oligomers and polymers, including phosphopeptides, phosphoproteins and phospholipids. In a specific embodiment, selective labeling of phosphate groups in proteins and peptides, for example, facilitates sepn., isolation and detection of phosphoproteins and phosphopeptides in complex mixts. of proteins. Selective labeling can be employed to selectively introduce phosphate labels at phosphate groups in an oligomer or polymer, e.g., in a peptide or protein. Dection of the presence of the label, is used to detect the presence of the phosphate group in the oligomer or

polymer. The method is useful for the detection of phosphoproteins or phosphopeptides. The phosphate label can be a colorimetric label, a radiolabel, a fluorescent or phosphorescent label, an affinity label or a linker group carrying a reactive group (or latent reactive group) that allows selective attachment of the oligomer of polymer (protein or peptide) to a phosphate label, to an affinity label or to a solid support. The method can be combined with well-known methods of mass spectrometry to detect and identify phosphopeptides and phosphoproteins.

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L87 ANSWER 14 OF 42 PASCAL COPYRIGHT 2004 INIST-CNRS. ALL RIGHTS RESERVED. on STN

ACCESSION NUMBER: 2003-0233636 PASCAL

TITLE (IN ENGLISH): Poly(2-hydroxyethylmethacrylate)/chitosan dye and different metal-ion-**immobilized** interpenetrating network membranes: Preparation and application in metal affinity chromatography

AUTHOR: BAYRAMOZLU Guelay

CORPORATE SOURCE: Department of Chemistry, Kirikkale University, 71450 Yahsihan Kirikkale, Turkey

SOURCE: Journal of applied polymer science, (2003), 88(7), 1843-1853, 28 refs.
ISSN: 0021-8995 CODEN: JAPNAB

DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: United States
LANGUAGE: English
AVAILABILITY: INIST-1257, 354000109442630320
UP 20030603

AB Composite membranes were synthesized with 2-hydroxyethylmethacrylate and chitosan (pHEMA/ chitosan) via an ultraviolet-initiated photopolymerization technique in the presence of an initiator (.alpha.,.alpha.'-azobisisobutyronitrile). The interpenetrating network (IPN) membranes were improved by the **immobilization** of dye molecules via hydroxyl and **amino** groups on the membrane **surfaces** from the IPNs. A triazidine dye (Procion Green H-4G) was covalently **immobilized** as a ligand onto the IPN membranes. The **protein** showed various affinities to different chelated metal ions on the membrane surfaces that best matched its own distribution of functional sites, resulting in a distribution of binding energies. In support of this interpretation, two different metal ions, Zn(II) and Fe(III), were chelated with the **immobilized** dye molecules. The **adsorption** and binding characteristics of the different metal-ion-chelated dye-**immobilized** IPN membranes for the lysozyme were investigated with aqueous solutions in magnetically stirred cells. The experimental data were analyzed with two **adsorption** kinetic models, pseudo-first-order and pseudo-second-order, to determine the best fit equation for the **adsorption** of lysozyme onto IPN membranes. The second-order equation for the lysozyme-dye-metal-chelated IPN membrane systems was the most appropriate equation for predicting the **adsorption** capacity for all the tested **adsorbents**. The reversible lysozyme **adsorption** on the dye-**immobilized** and metal-ion-chelated membranes obeyed the Temkin isotherm. The lysozyme **adsorption** capacity of the pHEMA/ chitosan dye, pHEMA/chitosan dye-Zn(II), and pHEMA/ chitosan dye-Fe(III) membranes were 2.54, 2.85, and 3.64 mg cm .sup.2, respectively. The nonspecific **adsorption** of the lysozyme on the plain pHEMA/chitosan membrane was about 0.18 mg cm .sup.-.sup.2.

L87 ANSWER 15 OF 42 PASCAL COPYRIGHT 2004 INIST-CNRS. ALL RIGHTS RESERVED. on STN

ACCESSION NUMBER: 2003-0097920 PASCAL

TITLE (IN ENGLISH): **Adsorption** kinetics and mechanical properties of thiol-modified DNA-oligos on gold investigated by microcantilever sensors SPM 2001 Proceedings of the Third International Conference on Scanning **Probe** Microscopy, Sensors and Nanostructures, Makuhari, Chiba, Japan, May 27-31, 2001

AUTHOR: MARIE Rodolphe; JENSENIUS Henriette; THAYSEN Jacob; CHRISTENSEN Claus B.; BOISEN Anja FUJIHIRA Masamichi (ed.)

CORPORATE SOURCE: Mikroelektronik Centret, Technical University of Denmark, Bldg. 345E, 2800 Lyngby, Denmark Department of Biomolecular Engineering, Tokyo Institute of Technology, Yokohama, Japan

SOURCE: Ultramicroscopy, (2002), 91(1-4), 29-36, 26 refs. Conference: 3 International Conference on Scanning Probe Microscopy, Sensors, and Nanostructures, Tokyo (Japan), 27 May 2001 ISSN: 0304-3991 CODEN: ULTRD6

DOCUMENT TYPE: Journal; Conference

BIBLIOGRAPHIC LEVEL: Analytic

COUNTRY: Netherlands

LANGUAGE: English

AVAILABILITY: INIST-15936, 354000104326080040

UP 20030303

AB **Immobilised** DNA-oligo layers are scientifically and technologically appealing for a wide range of sensor applications such as DNA chips. Using microcantilever-based sensors with integrated readout, we demonstrate in situ quantitative studies of surface-stress formation during self-assembly of a 25-mer thiol-modified DNA-oligo layer. The self-assembly induces a surface-stress change, which closely follows Langmuir **adsorption** model. The **adsorption** results in compressive surface-stress formation, which might be due to intermolecular repulsive forces in the oligo layer. The rate constant of the **adsorption** depends on the concentration of the oligo solution. Based on the calculated rate constants a **surface** free energy of the **thiol**-modified DNA-oligo **adsorption** on gold is found to be -32.4 kJ mol.sup.-.sup.1. The **adsorption** experiments also indicate that first a single layer of DNA-oligos is assembled on the gold surface after which a significant unspecific **adsorption** takes place on top of the first DNA-oligo layer. The cantilever-based sensor principle has a wide range of applications in real-time local monitoring of chemical and biological interactions as well as in the detection of specific DNA sequences, **proteins** and particles.

L87 ANSWER 16 OF 42 PASCAL COPYRIGHT 2004 INIST-CNRS. ALL RIGHTS RESERVED. on STN

ACCESSION NUMBER: 1995-0315351 PASCAL

TITLE (IN ENGLISH): Application of cationic latex particles for **protein** separation

AUTHOR: SUMI Y.; SHIROYA T.; FUJIMOTO K.; WADA T.; HANDA H.; KAWAGUCHI H.

CORPORATE SOURCE: Keio univ., fac. sci. technology, dep. applied chemistry, Kohoku-ku, Yokohama 223, Japan

SOURCE: Colloids and surfaces. B, Biointerfaces, (1994), 2(4), 419-427, 14 refs.
ISSN: 0927-7765
DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: Netherlands
LANGUAGE: English
AVAILABILITY: INIST-18274 B, 354000045700580060
UP 20001031
AB We have prepared cationic latex particles with **amino** groups on their **surface**. The particles were composed of a polystyrene core and a poly(glycidyl methacrylate) surface layer, to which hexamethylenediamine was **immobilized** by means of coupling with epoxy groups. The zeta potential of the particles was approximately 30 mV and the isoelectric point was 10.5. The latex particles preferentially **adsorbed** acidic **proteins** through an electrostatic interaction. We compared the capacity and selectivity in **adsorption** of acidic **proteins** on the cationic particles and on diethylaminoethyl (DEAE)-Sepharose gel, which has been conventionally used. The latex particles were twenty times more efficient in **adsorption** of **proteins** than DEAE-Sepharose gel

L87 ANSWER 17 OF 42 JICST-EPlus COPYRIGHT 2004 JST on STN
ACCESSION NUMBER: 1010895379 JICST-EPlus
TITLE: Nanomechanics of Surface **Immobilized** **Protein** Molecules.
AUTHOR: IKAI ATSUSHI
CORPORATE SOURCE: Tokyo Inst. Technol, Graduate School of Biosci. and Biotechnol., JPN
SOURCE: Hyomen Kagaku (Journal of the Surface Science Society of Japan), (2001) vol. 22, no. 9, pp. 620-626. Journal Code: F0940B (Fig. 9, Ref. 14)
ISSN: 0388-5321
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article
LANGUAGE: Japanese
STATUS: New
AB **Proteins** and **polypeptides** were first covalently **immobilized** on a solid surface and then extended by a tensile force applied at the two ends of the polymer chain. The method consisted of introducing cysteine residues at N- and C-termini of **protein** molecules and covalently **immobiling** them on an **amino** -silanized **surface** of a crystalline silicon wafer. The other end of the **protein** molecule was cross-linked to a functionalized AFM (atomic force microscope) tip with covalent cross-linkers. The relationship between the tensile force and the extension length of the molecule was measured using the force curve mode of AFM. Results obtained with a polyglutamic acid that takes helical conformation in acidic and random coil state in neutral and alkaline media is described. Also the relationships measured with .BETA.-sheet globular **protein**, carbonic dehydratase are given. (author abst.)

L87 ANSWER 18 OF 42 JICST-EPlus COPYRIGHT 2004 JST on STN
ACCESSION NUMBER: 990971443 JICST-EPlus
TITLE: **Immobilization** of Photosynthetic Reaction Center **Complexes** onto a Hydroquinonethiol-Modified Gold Electrode.
AUTHOR: MATSUMOTO K; NOMURA K; TOHNAI Y; FUJIOKA S; WADA M; ERABI T
CORPORATE SOURCE: Tottori Univ., Tottori
SOURCE: Bull Chem Soc Jpn, (1999) vol. 72, no. 10, pp. 2169-2175. Journal Code: G0450A (Fig. 7, Tbl. 2, Ref. 24)
CODEN: BCSJA8; ISSN: 0009-2673

PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article
LANGUAGE: English
STATUS: New
AB The **immobilization** of reaction center **complexes** onto a gold electrode was attempted through the binding affinity between reaction centers and hydroquinone-2-**thiol adsorbed** on an electrode **surface**. The largest anodic photoresponse by **immobilized** reaction centers was observed using ubiquinone B-depleted reaction centers and with the pre-oxidation of **adsorbed** hydroquinone-2-thiol, indicating that the degree of the orientation of reaction center particles increases through the binding affinity between vacant QB-sites in the particles and p-benzoquinonethiol. This anodic photoresponse could be elongated over a period of 5h (2500 cycles of turnover number) by adding cytochrome c2 into the electrolytic solution. (author abst.)

L87 ANSWER 19 OF 42 JICST-EPlus COPYRIGHT 2004 JST on STN
ACCESSION NUMBER: 930288356 JICST-EPlus
TITLE: Study on electron-transfer **protein** monolayer on an electrode surface as an electron-transfer interface.
AUTHOR: SAGARA TAKAMASA
CORPORATE SOURCE: Yokohama National Univ., Faculty of Engineering
SOURCE: Nissan Kagaku Shinko Zaidan Kenkyu Hokokusho (Research Projects in Review, Nissan Science Foundation), (1993) vol. 15(1992), pp. 159-163. Journal Code: X0726A (Fig. 4, Ref. 4)
ISSN: 0911-4572
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article
LANGUAGE: Japanese
STATUS: New
AB The factors governing the electron-transfer process of monolayer-**adsorbed** electron-transfer **proteins** on the electrode surface were studied at a molecular level using potential-modulated UV-vis reflectance spectroscopy (ER). It was found that cytochrome c molecules are oriented on 4-pyridyldisulfide-modified gold electrode so that the heme planes are perpendicular to the electrode surface. Cytochrome c monolayer on the electrode surface did not accelerate the electrode reaction of the redox species in the solution phase, probably due to the restriction of the rotation of cytochrome c molecule **immobilized** on the electrode **surface**. **Thiol** molecules possessing a **carboxyl** terminal group showed a function to regulate the redox potentials of cytochrome c3, a tetra-heme **protein**. That is, such a thiol molecule acts as not only an "electron-transfer promoter" but also a "redox potential controller". These findings would open the next door for the design of functional bioelectronic devices. (author abst.)

L87 ANSWER 20 OF 42 BIOTECHNO COPYRIGHT 2004 Elsevier Science B.V. on STN
DUPLICATE
ACCESSION NUMBER: 1995:25297871 BIOTECHNO
TITLE: **Protein** selectivity in **immobilized** metal affinity chromatography based on the surface accessibility of aspartic and glutamic acid residues
AUTHOR: Zachariou M.; Hearn M.T.W.
CORPORATE SOURCE: Biochemistry/Molecular Biology Dept., Monash University,Clayton, Vic. 3168, Australia.
SOURCE: Journal of Protein Chemistry, (1995), 14/6 (419-430)
CODEN: JPCHD2 ISSN: 0277-8033
DOCUMENT TYPE: Journal; Article
COUNTRY: United States
LANGUAGE: English

SUMMARY LANGUAGE: English
ED 20000202
AB The interaction of different species variants of cytochrome c and myoglobin, as well as hen egg white lysozyme, with the hard Lewis metal ions Al.sup.3.sup.+ Ca.sup.2.sup.+, Fe.sup.3.sup.+ and Yb.sup.3.sup.+ and the borderline metal ion Cu.sup.2.sup.+, **immobilized** to iminodiacetic acid (IDA)-Sepharose CL-4B, has been investigated over the range pH 5.5-8.0. With appropriately chosen buffer and metal ion conditions, these **proteins** can be bound to the **immobilized** M(n+)- IDA **adsorbents** via negatively charged amino acid residues accessible on the **protein** surface. For example, tuna heart cytochrome c, which lacks surface- accessible histidine residues, readily bound to the Fe.sup.3.sup.+-IDA **adsorbent**, while the other **proteins** also showed affinity toward **immobilized** Fe.sup.3.sup.+-IDA **adsorbents** when buffers containing 30 mM of imidazole were used. These studies document that **protein** selectivity can be achieved with hard-metal- ion **immobilized** metal ion affinity chromatography (IMAC) systems through the interaction of surface-exposed aspartic and glutamic acid residues on the **protein** with the **immobilized** M(n+)-IDA **complex**. These investigations have also documented that the so-called soft or borderline **immobilized** metal ions such as the Cu.sup.2.sup.+-IDA **adsorbent** can also interact with surface-accessible aspartic and glutamic acid residues in a **protein**-dependent manner. A relationship is evident between the number and extent of clustering of the surface-accessible aspartic and glutamic acid residues and **protein** selectivity with these IMAC systems. The use of elution buffers which contain organic compound modifiers which replicate the carboxyl group moieties of these **amino** acids on the **surface** of **proteins** is also described.

L87 ANSWER 21 OF 42 BIOTECHNO COPYRIGHT 2004 Elsevier Science B.V. on STN
ACCESSION NUMBER: 1998:28277042 BIOTECHNO
TITLE: Role of the .gamma. chain Ala-Gly-Asp-Val and A.alpha. chain Arg-Gly-Asp-Ser sites of fibrinogen in coaggregation of platelets and fibrinogen-coated beads
AUTHOR: Liu Q.; Rooney M.M.; Kasirer-Friede A.; Brown E.; Lord S.T.; Frojmovic M.M.
CORPORATE SOURCE: M.M. Frojmovic, Department of Physiology, McGill University, Montreal, Que. H3G 1Y6, Canada. E-mail: mony@physio.mcgill.ca
SOURCE: Biochimica et Biophysica Acta - Protein Structure and Molecular Enzymology, (1998), 1385/1 (33-42), 45 reference(s) CODEN: BBAEDZ ISSN: 0167-4838
PUBLISHER ITEM IDENT.: S0167483898000399
DOCUMENT TYPE: Journal; Article
COUNTRY: Netherlands
LANGUAGE: English
SUMMARY LANGUAGE: English
ED 20000202
AB Fibrinogen (Fg) mediates platelet aggregation and adhesion to artificial **surfaces**. The **carboxyl** terminus of the .gamma. chain of Fg (residues AGDV at .gamma.408-411) is known to play an exclusive role in platelet aggregation, while there is no known role for the consensus RGD sites in the A.alpha. chain. In this study, we used flow cytometry to measure the coaggregation (CA) of platelets with Fg-coated beads, and investigated which domains in surface-**immobilized** Fg support platelet adhesion. CA of platelets with Fg-beads was nearly abolished in the presence of 4A5, a monoclonal antibody (mAb) whose epitope includes AGDV, while Z69/8, a mAb that also binds to the .gamma. chain carboxyl

terminus but does not cover AGDV, had little effect. When beads were coated with recombinant Fg (rFg) lacking AGDV, CA was similarly abolished. In contrast, beads coated with Fg that lacked the RGDS site, supported platelet CA as did intact Fg. These results were confirmed in experiments that measured the binding of activated soluble glycoprotein IIb and IIIa (GPIIbIIIa), the platelet membrane glycoprotein **complex** known to be the Fg receptor, to **immobilized** Fg. This binding was inhibited by mAb 4A5, but not by mAb Z69/8. Binding was totally retained when beads were coated with Fg lacking RGDS, but was completely lost when beads were coated with Fg lacking AGDV. These results demonstrated that the AGDV sequence on the carboxyl terminus of the .gamma. chain of Fg plays an exclusive role in platelet adhesion to **surface-immobilized** Fg, while the **carboxyl** terminus of the A.alpha. chain, including a consensus RGD site, is not required. Copyright (C) 1998 Elsevier Science B.V.

L87 ANSWER 22 OF 42 BIOTECHDS COPYRIGHT 2004 THOMSON DERWENT/ISI on STN
ACCESSION NUMBER: 2003-00050 BIOTECHDS
TITLE: Characterizing interaction between two molecular binding partners, by binding a first partner **immobilized** on a laser desorption ionization **probe** to a second partner and detecting the mass spectrum of second partner fragments;
recombinant **protein-protein** interaction detection using mass spectroscopy
AUTHOR: WEINBERGER S; MORRIS T
PATENT ASSIGNEE: CIPHERGEN BIOSYSTEMS INC; HUMAN GENOME SCI INC
PATENT INFO: WO 2002031484 18 Apr 2002
APPLICATION INFO: WO 2000-US28261 12 Oct 2000
PRIORITY INFO: WO 2000-28261 12 Oct 2000; WO 2000-28261 12 Oct 2000
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 2002-537209 [57]
AB DERWENT ABSTRACT:
NOVELTY - Characterizing binding interactions between first and second molecular binding partners (FP,SP, respectively), involving binding SP to FP, where FP is **immobilized** to a laser desorption ionization **probe**, fragmenting SP, and detecting at least one of the fragments by a tandem mass spectrometer measurement, the mass spectrum of the detected fragments characterizing the binding interactions, is new.
BIOTECHNOLOGY - The method further comprises before binding of SP to FP, **immobilizing** FP to a surface of an affinity capture **probe** by direct binding e.g. covalent bonding between FP and a carbonyldiimidazole group of the **probe surface**, or between an **amino** or **thiol** group of FP and an epoxy group of the **probe** surface. The direct binding may also be non-covalent bonding, coordinate or dative bonding to a metal (gold or platinum) of the **probe** surface. The affinity capture **probe immobilizing** surface is a chromatographic **adsorption** surface such as reverse phase, anion exchange, cation exchange, **immobilized** metal affinity capture and mixed-mode surfaces. The **immobilizing** of FP to the affinity capture **probe** surface may also be an indirect binding e.g. covalent binding using a cleavable linker, cleavable by chemicals, enzymes or radiation; or noncovalent binding using a biotin molecule. The affinity capture **probe** surface includes an avidin molecule, and noncovalent indirect bonding to the affinity capture **probe** surface includes a streptavidin molecule. FP is a nucleic acid, carbohydrate, lipid, but preferably a **protein** naturally occurring in an organism selected from a single cell eukaryote, prokaryote, and virus, preferably a multicellular eukaryote such as insects, nematodes, fish, and vascular plants, but preferably a mammal

e.g. homo sapiens or rodents. The **protein** may also be non-naturally occurring e.g. a recombinant fusion **protein** such as an antibody, receptor (e.g. a cell surface receptor, transmembrane receptor, and nuclear receptor), transcription factor, cytoskeletal **protein**, cell cycle **protein**, and ribosomal **protein**. The binding of SP to FP is effected by contacting FP with a biological sample e.g. a cell lysate or a fluid selected from blood, lymph, urine, cerebrospinal fluid, synovial fluid, milk, saliva, vitreous humor, aqueous humor, mucus and semen. SP is a **protein**. The binding of SP to FP is also affected by contacting FP with an aliquot of a chemically synthesized or a biologically displayed combinatorial library e.g. a phage-displayed library. The fragmenting is effected by contacting SP with: an enzyme e.g. a specific endoprotease e.g. trypsin, Glu-C (V8) protease, endoproteinase Arg-C (serine protease), endoproteinase Arg-C (cysteine protease), Asn-N protease, and Lys-C protease; or a liquid phase chemical e.g.CNBr. The method further includes, after binding of SP and FP, but before fragmenting SP, denaturing the SP. Also, after fragmenting, the **probe** is washed with two eluants, the second differing by at least one elution characteristic. Other additions to the method are: applying energy absorbing molecules to the **probe**, engaging the **probe** in the affinity capture **probe** interface of an analytical instrument, e.g. a laser desorption ionization source; an affinity capture **probe** interface; and a tandem mass spectrometer. The affinity capture **probe** interface is capable of engaging an affinity capture **probe** and positioning the **probe** in an interrogatable relationship to the laser source and concurrently in communication with the tandem mass spectrometer; and then desorbing and ionizing fragments of SP from the **probe** using the laser source. After the detecting of the fragments, the fragment measurements are compared with those predicted by applying cleavage rules of the fragmenting enzyme to the primary amino acid sequence of SP. After the detecting and before the comparing, the SP is identified through ms/ms analysis. The ms/ms analysis comprises: mass spectrometrically selecting a first fragment of SP; dissociating (by collision induced dissociation) the SP first fragment in the gas phase; measuring the fragment spectrum of the SP first fragment, and then comparing the fragment spectrum to fragment spectra predicted from amino acid sequence data prior-accessioned in a database. The amino acid sequence data are selected from empiric and predicted data.

USE - The method is useful for characterizing binding interactions between FP such as naturally occurring **proteins** (e.g. antibody, receptor (cell surface, transmembrane or nuclear receptor), transcription factor, cytoskeletal **protein**, cell cycle **protein** or ribosomal **protein**) of a multicellular eukaryote (e.g., a mammal preferably, human, or rodent such as mouse, rat, or guinea pig), single cell eukaryote or virus, nucleic acid, carbohydrate, or lipid, T cell receptor or a major histocompatibility **complex** molecule, and SP. The method can also be used for characterizing binding interactions between a receptor and an agonist, partial agonist, antagonist or partial antagonist of the receptor, and between glycoprotein receptor and a lectin (all claimed).

ADVANTAGE - The method provides for improved identification and characterization of analytes and of affinity interaction between analytes by tandem mass spectrometry.

EXAMPLE - No suitable example given.(86 pages)

L87 ANSWER 23 OF 42 BIOTECHDS COPYRIGHT 2004 THOMSON DERWENT/ISI on STN
ACCESSION NUMBER: 1999-13094 BIOTECHDS
TITLE: New **biopolymer** layer comprising substrate and oligonucleotides with precise control of surface coverage of DNA **probes** on metal surfaces;

biopolymer comprising gold surface on which mercaptohexanol-associated single stranded DNA **probe** is **immobilized**, useful for DNA sequencing

AUTHOR: Tarlov M J; Herne T M; McKenney K H
PATENT ASSIGNEE: Tarlov M J; Herne T M; McKenney K H
LOCATION: Gaithersburg, MD, USA.
PATENT INFO: US 5942397 24 Aug 1999
APPLICATION INFO: US 1997-988338 10 Dec 1997
PRIORITY INFO: US 1997-988338 10 Dec 1997
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 1999-493507 [41]

AB A **biopolymer**-containing monolayer comprising a metal substrate (preferably gold), thiol-derived oligonucleotides and organic thiols bound to the substrate is new. Also claimed is a method for the preparation of the monolayer which involves applying a solution of thiol-derivatized oligonucleotides to the substrate to permit binding, and applying a second solution comprising an organic thiol to displace nonspecifically **adsorbed** oligonucleotides, and to prevent their non-specific binding. The new **biopolymer** DNA **probes** are useful for specific hybridization reactions between DNA **probes** and nucleic acid samples, and are especially useful for accurate DNA sequencing and screening. Preferably, the thiol-derivatized oligonucleotides comprise RNA, peptide **nucleic acids**, or especially ss DNA whose organic thiol comprises a terminal hydroxy group, preferably mercaptohexanol. Passivation of the **surface** with a diluent **thiol** increases the biological activity of the **immobilized** sequences. (11pp)

L87 ANSWER 24 OF 42 BIOTECHDS COPYRIGHT 2004 THOMSON DERWENT/ISI on STN
ACCESSION NUMBER: 2004-06419 BIOTECHDS
TITLE: Modifying electrodes in array of electrodes by binding respective **probe** molecule to electrodes to be modified, dissociating respective **probe** molecule from electrode and contacting each electrode with respective liquid;
DNA **probe immobilization** on electrode array support for DNA array construction and DNA biosensor construction
AUTHOR: KUNWAR S; PISHARODY S; MATHAI G T; SCABOO K
PATENT ASSIGNEE: KUNWAR S; PISHARODY S; MATHAI G T; SCABOO K
PATENT INFO: US 2003224387 4 Dec 2003
APPLICATION INFO: US 2002-327868 26 Dec 2002
PRIORITY INFO: US 2002-327868 26 Dec 2002; US 2002-382074 22 May 2002
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 2004-033953 [03]

AB DERWENT ABSTRACT:
NOVELTY - Modifying (M1) electrodes (I) in an array of electrodes involves overlying each of at least two electrodes (II) to be modified with a respective protective molecule (III), binding respective **probe** molecule to (II) and dissociating (III) from a electrode overlaid by a protective molecule and contacting each of electrodes in several subsets of (I) with a respective liquid.

DETAILED DESCRIPTION - Modifying (M1) electrodes (I) in an array of electrodes involves overlying each of at least two electrodes (II) to be modified with a respective protective molecule (III) such that (III) inhibits **probe** molecules from binding to the two electrodes, binding respective **probe** molecule to (II), and: (a) dissociating (III) from a electrode overlaid by a protective molecule and contacting each of electrodes in several subsets of (I) with a respective

liquid, where each liquid comprises a respective different **probe** molecule, and an electrode is subjected to both steps of dissociating and contacting the respective different **probe** molecule of the respective liquid which binds to the electrode; (b) contacting several of (I) with a liquid (IV) and dissociating a protective molecule form one of the electrodes in contact with (IV) where the **probe** molecule of (IV) binds to the electrode which is subjected to contacting and dissociating steps; and (c) addressing one of (I) with a dissociation potential and contacting (I) with a liquid comprising a **probe** molecule or a protective molecule, where one of **probe** molecule and one of the protective molecule bind to the first electrode. INDEPENDENT CLAIMS are also included for the following: (1) modifying (M2) electrodes in an array of electrode pairs, where each electrode pair comprises a first and second electrode involves overlaying each of the first and second electrodes in a electrode pair with (III) such that (III) inhibits **probe** molecules from binding to the two electrodes, binding respective **probe** molecule to the first and second electrodes of the electrode pairs, dissociating a protective molecule form the first electrode of the electrode pair without dissociating a protective molecule form the second electrode of the electrode pair, and contacting the first and second electrode of the electrode pair in the array of electrode pair with a liquid comprising a first **probe** molecule, where the first and second electrodes of the electrode pair being spaced apart by less than 1000 A and the first **probe** molecule of the liquid binds to the first electrode; (2) forming (M3) an electrical connection between first electrode and a second electrode of an electrode pair involves binding a first molecule to the first electrode where the first molecule comprises a first single stranded **polynucleotide**, binding a second molecule to the second electrode where the second molecule comprises an intercalating group configured to intercalates with double stranded **polynucleotides**, and contacting the electrode pair with a second single stranded **polynucleotide** at least partially complementary to the first **polynucleotide**, where the first and second **polynucleotides** form a duplex region and the intercalating group intercalates with the duplex region thus forming the electrical connection between the first and second electrodes; (3) preparing (M4) a sensor involves binding a first molecule to a first electrode, binding a second molecule to a second electrode, where if the first electrode pair is contacted with a liquid comprising a second single stranded **polynucleotide** sequence at least partially complementary to the first **polynucleotide** sequence, the first and second **polynucleotide** sequences will form a duplex region and the intercalating group will intercalate with the duplex region thus modifying an electrical characteristic of the first and second electrodes, thus the presence of the at least partially complementary **polynucleotide** may be determined; (4) an apparatus (V) for preparing an array of modified surfaces comprising a device configured to contact electrodes of each of a number N subsets of electrodes an array of electrodes with a respective liquid, where each liquid comprises a respective different compound and N is an integer greater than 1 and for each subset of the N subsets of electrodes modify an electrical potential between at least a first electrode of the subset of electrodes and a reference electrode, thus the respective compound of the fluid contacting the first electrode binds to the first electrode; and (5) a sensor comprising a substrate which comprises a first electrode pair comprising first and second electrode, first molecule comprising first **polynucleotide**, bound with first electrode, and a second molecule comprising a group configured to intercalate with double stranded **polynucleotide** compounds, bound with second electrode.

BIOTECHNOLOGY - Preferred Method: In (M1), at least 2, 25 or 100 electrodes that are subjected to both dissociating and contacting steps

are members of respective different subsets of electrodes. The contacting step is performed after dissociating step for some subsets in the several of the subsets of electrodes that comprise at least 2 or 5 member electrodes but fewer than 50 or 25 member electrodes. The dissociating step is performed while the subsets of electrodes are in contact with the respective liquids in the contacting step for at least some subsets in the several of the subsets of electrodes. Contacting step further comprises contacting each subset of a first portion in the several of the subsets with the respective liquid, while the subsets in the first portion of subsets remain in contact with the respective liquids, contacting each subset of a second different portion in the several of the subsets with the respective liquid. While performing the contacting step, at least 25 or 100 of the subsets of electrodes in simultaneous contact with the respective liquid comprises a respective different molecule. The contacting step involves simultaneously contacting at least some subsets in the several of the subsets of the electrodes with the respective liquid where the respective liquids comprise at least two different liquids. The dissociating step involves modifying an electrical potential difference between the electrode and a reference electrode for each electrode in several of the electrodes, thus a respective protective molecule dissociates from the electrode. The contacting step further involves contacting a respective, different reference electrode with the respective liquid for each of at least two subsets in the several of the subsets of electrodes, thus electrically contacting the electrodes in the subset of electrodes and the reference electrode or respective different reference electrode. The liquid used in contacting step does not electrically connect the subset with the respective reference electrodes of other subsets of electrodes. The contacting step further involves applying a droplet of liquid to the subset of electrodes and reference electrode where each droplet of liquid comprises a respective different **probe** molecules. (M1) further involves repeating the dissociating and contacting steps until a respective **probe** molecule is bound to each of at least 50 or 500 electrodes of the array. (M1) further comprises prior to performing the steps of dissociating and contacting, overlaying a several of the electrodes with a protective molecule by contacting the electrodes with a liquid comprising a protective molecule, where a protective molecule binds to electrodes of the array. The protective molecule is chosen from one of the alkylsiloxane, an alkanethiol containing 1-22 carbon atoms and a fatty acid. A respective protective molecule is bound to the each electrode in a several of electrodes, by a sulfur group. The **probe** molecules comprises a **polynucleotide** and a binding portion that binds the electrodes, where the **polynucleotides** bound to different electrodes have different sequences from one another and the binding portion comprising sulfur. The array of electrodes comprises a several of electrode pairs, where the first and the second electrodes of the electrode pairs in the array are spaced apart preferably by less than 500 A. The dissociating step comprises dissociating the a respective protective molecule from only the first electrode of the electrode pair where the electrode pairs belong to different subsets of the several of subsets of electrodes and the contacting step comprises contacting at least two electrode pairs with respective liquids comprising respective different **probe** molecules, where for each electrode pair of the two electrode pairs, contacted with respective liquids comprising respective different **probe** molecules where only the first electrode of the electrode pair is also subjected to the dissociating step, thus the respective different **probe** molecule of the respective liquid binds only to the first electrode, second electrode of the electrode pair, and contacting both electrodes of the electrode pair with a liquid comprising a **probe** molecule to be bound to the second electrode of the electrode pair, where the **probe** molecule to be bound to the second electrode is different form the **probe** molecule bound to

the first electrode, and the **probe** molecule to be bound to the second electrode of electrode pair binds to the second electrode. The **probe** molecule bound to one of the first and second electrode comprises the first **polynucleotide**. The **probe** molecule bound to the other electrode comprises an intercalating group, where upon contacting the electrode pair with a liquid comprising a **target polynucleotide** at least partially complementary to the first **polynucleotide** of the **probe** molecule bound to the first electrode an electrical resistance between the first and second electrodes will be reduced. The dissociating step is performed without removing the liquid used in the contacting step, where the dissociating step comprises modifying an electrical potential of a electrode or modifying an electrical potential of a electrode and a reference electrode, thus a molecule dissociates from the electrode. (M1) further involves addressing a different electrode with a dissociation potential, contacting electrodes in the array with a liquid comprising different **probe** molecule, contacting electrodes of the array with a liquid comprising a protective molecule, addressing a electrode in the array of electrodes with dissociation potential where one electrode that was subjected to addressing step and contacting step while not concurrently being subjected to addressing step and contacting step, contacting electrodes in the array of electrodes with a liquid comprising a different **probe** molecule and contacting electrodes in the array of electrode with a liquid comprising a protective molecule. The addressing step comprises modifying an electrical potential difference between a electrode and a reference electrode. The addressing step dissociates the protective molecule from the electrode. In (M2), the first **probe** comprises a **polynucleotide** or a phosphorothiolated **polynucleotide**. The second **probe** molecule comprises an intercalating group configured to intercalate with double stranded **polynucleotides**. In (M3), the second molecule comprises a conductive oligomer disposed intermediate the intercalating group and a second portion of the second molecule that is associated with the second electrode, where the second molecule is free of **polynucleotides**. The binding of the first and the second molecule to the first and the second electrode comprises binding a sulfur group of the first and second molecule to the first and second electrode, respectively. The intercalating group comprises ethidium bromide, acridine or a derivative of ethidium bromide or acridine. Prior to the step of binding the first molecule or second molecule to the first electrode or second electrode, overlaying the protective molecule upon the first electrode or second electrode, thus the protective molecule inhibits the association of first and second molecule with the first electrode or second electrode. The step of binding the first molecule or the second molecule to the first electrode or second electrode involves contacting the first and second electrodes with the liquid comprising the first molecule and modifying an electrical potential difference between the first electrode or second electrode and a reference electrode, thus protecting the first electrode or second electrode. Binding of the first molecule comprising respective different first **polynucleotides** to the first electrodes of respective different electrode pairs thus the first **polynucleotide** bound to different first electrodes will selectively from duplex regions with different second **polynucleotides**. The step of binding a first or second molecule to the first or second electrode involves contacting at least two subsets or number N subsets of the electrode pairs with respective liquid or respective different second molecule and modifying an electrical potential difference between the first electrode or second electrode of one of the electrode pairs and a reference electrode thus respective first molecule or second molecule binds to the first electrode or second electrode where N is an integer greater than one and less than Na. In (M4) contacting the subset with respective liquid involves applying

aliquot of the respective liquid to the subset, where the electrode pairs of each subset of electrode pairs or isolated from aliquots of liquid applied to other subsets of electrode pairs. (M4) further involves determining an electrical characteristic such as conductance, resistance, an impedance or an capacitance of the first and second electrodes thus the presence of the second **polynucleotide** may be determined.
The second molecule comprises a conductive oligomer disposed intermediate to the intercalating group and a portion of the second molecule that is bound to second electrode, where conductive oligomer comprises a saccharide and an aromatic group. Preferred Apparatus: (V) is configured to repeatedly contact subsets of surfaces in the array of surfaces with a respect liquid where each liquid comprises a respective different compound, and modify an electrical potential between the electrode in the subset of electrodes and a reference electrode until a respective different compound has been bound with each electrode in the array of electrodes. (V) further comprises several of droplet preparation devices, where each droplet preparation device is in fluid communication with a respective reservoir that comprises a respective one of the different compounds, and a droplet delivery device configured to deliver droplets prepared by the droplet preparation devices to predetermined subsets in the N subsets of electrodes, thus contact the predetermined subsets with respective liquid. The droplet preparation device comprises a capillary configured to prepare a droplet of fluid, where the droplet preparation devices are configured to prepare droplets by the thermally modifying pressure of the liquid, piezo-electrically modifying the pressure of the liquid and ultrasonically modifying a pressure of the liquid. The device is configured to bind one respective protective molecule to the electrodes of the array, where the respective protective compound inhibits association of the respective different compounds with electrodes. A sensor comprising. Preferred Sensor: The substrate comprises a number Na electrode pairs, each electrode pair comprising a first and second electrode pair, a first molecule bound with the second electrode, the first molecule comprising a first **polynucleotide** , a second molecule bound with the second electrode, the second molecule comprising a group configured to intercalate with double stranded **polynucleotide** compounds, and where upon contacting the electrode pair with a liquid comprising a second **polynucleotide** sequence at least partially complementary to the first and second **polynucleotide** sequences form a duplex region and the intercalating portion intercalates with the duplex region thereby modifying an electrical characteristic of the first and second electrodes where the presence of the at least partially complementary second **polynucleotide** may be determined. The different first **polynucleotides** are found with the first electrodes of respective different electrode pairs, thus the first **polynucleotides** bound to different first electrodes will selectively from duplex regions with different second **polynucleotides**.

USE - (M1) is useful for preparing sensors that are useful for detecting a wide range of macromolecules as well as macromolecules binding events.

EXAMPLE - Bare gold electrodes were cleaned by contacting the electrodes with a solution of 70% sulfuric acid and 30% hydrogen peroxide for one minute to remove organic surface contaminants. Each electrode within the array was protected by forming a self-assembled monolayer of a thiol containing compound on the electrodes. The self-assembled monolayers were prepared by exposing the electrodes of the array to an aqueous solution of 1 mM mercapto hexanol for 1-4 hours. Electrodes of the array were contacted with ethanol to remove any mercapto hexanol molecules which were not non-covalently bound to the electrodes. Electrodes of the array were addressed to deprotect individual electrodes by removing the mercapto hexanol. An electrode to be deprotected was contacted with an aqueous solution comprising 0.1 M potassium hydroxide

for 100 seconds. A step voltage of -1.2 volts versus a reference electrode was applied to an electrode which was a silver/chloride electrode, although other reference electrodes may be used. Only electrodes addressed by modifying the potential difference between the electrode and the reference electrode were deprotected. Upon deprotecting an electrode, electrodes of the array were exposed to a liquid comprising a high ionic strength buffered solution of a thiol-terminated oligonucleotide for 1-4 hours. The **thiol**-terminated oligonucleotide reacted with the **surfaces** of electrodes that had been deprotected by desorbing the mercapto hexanol to form a self assembled layer of the thiol-terminated oligonucleotide. Mercaptohexanol bound to electrodes that had not been deprotected inhibited **adsorption** of the thiol-terminated oligonucleotide thereto. The electrodes of the array were then re-exposed to a liquid comprising 1 mM mercapto hexanol for one hour and rinsed with water to prepare, at the surfaces of the deprotected electrodes, a stable phase capable of supporting hybridization to the thiol-terminated oligonucleotides. The steps of deprotecting one or more electrodes and attaching a thiol-terminated oligonucleotide were terminated oligonucleotide had been formed at the surface of each electrode within the array. The modified array may be exposed to a liquid comprising oligonucleotides at least partially complementary to the thiol-terminated electrodes of the electrode array. Hybridization between a thiol-terminated electrode and a partially complementary oligonucleotide may be determined by monitoring an electrical characteristic, such as a capacitance of each electrode within the array. Thus, the modified electrode array may be used to determine the presence of a several of **polynucleotides**. (34 pages)

L87 ANSWER 25 OF 42 BIOTECHDS COPYRIGHT 2004 THOMSON DERWENT/ISI on STN
ACCESSION NUMBER: 2003-17458 BIOTECHDS
TITLE: Electrochemical properties of DNA-intercalating doxorubicin and methylene blue on n-hexadecyl mercaptan-doped 5'-thiol-labeled DNA-modified gold electrodes; DNA **probe immobilization** on solid surface for DNA biosensor construction
AUTHOR: YAU HCM; CHAN HL; YANG MS
CORPORATE SOURCE: City Univ Hong Kong
LOCATION: Yang MS, City Univ Hong Kong, Dept Biol and Chem, 83 Tat Chee Ave, Kowloon, Hong Kong, Peoples R China
SOURCE: BIOSENSORS and BIOELECTRONICS; (2003) 18, 7, 873-879
ISSN: 0956-5663
DOCUMENT TYPE: Journal
LANGUAGE: English
AB AUTHOR ABSTRACT - Interactions between DNA-intercalating molecules, methylene blue (MB) and doxorubicin (DOX), and gold surface modified by various DNA species and n-hexadecyl mercaptan (HDM) were investigated by cyclic voltammetry (CV). Hydrophilic DOX was completely blocked by the HDM film from contacting the gold electrode whereas hydrophobic MB could readily partition into the film. Unlabeled single-stranded DNA (ssDNA) and double-stranded DNA (dsDNA) underwent non-specific **adsorption** on gold surface but the **adsorbed** DNA can be partially displaced by HDM. Thiol-labeled ssDNA and dsDNA **adsorbed** on gold **surface** via both **thiol**-gold linkage and non-specific interactions between DNA strands and gold. The non-specific interactions could be interrupted by the addition of HDM, forming a mixed monolayer containing both HDM and DNA attached to the gold **surface** at 5'-**thiol** termini. The presence of ssDNA and dsDNA in the monolayer facilitated the redox reaction of MB and DOX on the modified electrode. Both MB and DOX diffuse along the ssDNA in the ssDNA-containing monolayers, and they additionally intercalate into the dsDNA in the dsDNA-containing monolayers. No sufficient evidence is shown to indicate

that an organized monolayer is formed by the **thiol**-labeled dsDNA on gold **surface**, and that the redox reactions of MB and DOX were carried out by electron transfer through DNA helix. (C) 2002 Elsevier Science B.V. All rights reserved. (7 pages)

L87 ANSWER 26 OF 42 BIOTECHDS COPYRIGHT 2004 THOMSON DERWENT/ISI on STN
ACCESSION NUMBER: 1998-10694 BIOTECHDS
TITLE: Covalent attachment of **nucleic acids** to solid phase surfaces via disulfide bonds; by coating the **surface** with a mercaptosilane containing **sulfhydryl** groups, then coupling a modified nucleic acid to the sulfhydryl groups
AUTHOR: Anderson S; Rogers Y H
PATENT ASSIGNEE: Mol.Tool
LOCATION: Baltimore, MD, USA.
PATENT INFO: WO 9839481 11 Sep 1998
APPLICATION INFO: WO 1998-US4114 4 Mar 1998
PRIORITY INFO: US 1997-812010 5 Mar 1997
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 1998-495870 [42]
AB The covalent attachment of nucleic acid molecules (NAMs) to a solid phase (SP) is claimed and comprises: coating a SP surface with a mercaptosilane (of formula I) which comprises sulfhydryl groups; and coupling a sulfhydryl- or disulfide-modified NAM to the sulfhydryl groups of the mercaptosilane by means of a covalent bond. The process involves **immobilization** of NAMs to a SP by means of a reversible covalent bond. It may be used for preparation of arrays of **immobilized** NAMs, which are useful for hybridization, sequencing or polymorphic analysis. The mercaptosilanized surface provides a very hydrophobic surface, allowing oligonucleotide **probe** droplets to form at specific and localized positions on the SP surface. The process does not require the use of expensive crosslinking agents, which are difficult to use because of their sensitivity to air or humidity. The SP is glass e.g. a slide, plate, quartz or silicon wafer, or plastic, especially polystyrene. (X = alkoxy, acyloxy or halo; Y, Z = alkoxy, acyloxy, halo or a non-hydrolyzable inert group; L = a linker arm, especially (CH2)n, (CH2)n-aromatic-(CH2)n or an aromatic group; n = at least one.) (40pp)

L87 ANSWER 27 OF 42 BIOTECHDS COPYRIGHT 2004 THOMSON DERWENT/ISI on STN
ACCESSION NUMBER: 1996-03731 BIOTECHDS
TITLE: Particle carrier for binding nucleic acid; carboxylic acid-derivatized **adsorbent** for DNA **probe** hybridization, etc.
PATENT ASSIGNEE: Nippon-Gosei-Gomu
LOCATION: Japan.
PATENT INFO: JP 08000296 9 Jan 1996
APPLICATION INFO: JP 1994-163175 22 Jun 1994
PRIORITY INFO: JP 1994-163175 22 Jun 1994
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
OTHER SOURCE: WPI: 1996-091677 [10]
AB A new particle **adsorbent** for binding of nucleic acid has a ds oligonucleotide with a restriction site **immobilized** on an organic polymer particle surface. The particle is 0.1-15 um in average diameter, with **surface carboxyl** groups. The ds oligonucleotide is a 5- to 80-mer, and is **immobilized** via amide linkages between at least 1 amino group on either strand and at least 1 carboxyl group. An ss oligonucleotide is synthesized and purified, followed by terminal phosphorylation, formation of a ds oligonucleotide, **immobilization**, production of NotI termini and separation of the fragment. The **adsorbent** is useful in binding and recovery of

nucleic acid fragments with restriction cleavage termini, or for DNA binding **protein** purification, and is particularly useful in screening of plant markers, cloning, genome DNA analysis, etc. The **adsorbent** enables simple and accurate binding and recovery of the nucleic acid fragments. (7pp)

L87 ANSWER 28 OF 42 BIOTECHDS COPYRIGHT 2004 THOMSON DERWENT/ISI on STN
ACCESSION NUMBER: 1994-02984 BIOTECHDS
TITLE: Polymeric support or **adsorbent** with azlactone group on its surface;
retains physical and chemical properties and can be used for biologically active compound e.g. enzyme **immobilization** without activation
PATENT ASSIGNEE: Minnesota-Mining
PATENT INFO: WO 9325594 23 Dec 1993
APPLICATION INFO: WO 1993-US4555 13 May 1993
PRIORITY INFO: US 1992-896107 9 Jun 1992
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 1994-007467 [01]
AB A new chemically reactive support (CRS) comprises an existing support carrying azlactone functional groups on its surface, which modify reactivity with retention of the useful physical and chemical properties of the support. Also new are supports (AS) prepared from CRS by reacting the azlactone groups with a nucleophile. AS are useful as **adsorbents**, **complexing** agents, catalysts and chromatography materials e.g. affinity **adsorbents** for the separation of biomolecules, as diagnostic supports or in enzyme-membrane reactors. Nucleophiles, especially biologically active compounds, can be attached directly, without activation. The biologically active material may be immunochemically, physiologically or pharmaceutically active compounds including **proteins**, peptides, **polypeptides**, antibodies, antigenic substances, enzymes, cofactors, inhibitors, lectins, hormones, receptors, coagulation factors, **amino** acids, histones, vitamins, drugs, cell **surface** markers and substances which interact with any of these. (65pp)

L87 ANSWER 29 OF 42 BIOTECHDS COPYRIGHT 2004 THOMSON DERWENT/ISI on STN
ACCESSION NUMBER: 1992-08887 BIOTECHDS
TITLE: **Protein** purification with metal chelate **adsorbent**;
metal chelate affinity chromatography using a histidine affinity tail e.g. for recombinant fusion **protein** purification (conference abstract)
AUTHOR: Hochuli E
CORPORATE SOURCE: Roche
LOCATION: Hoffmann-La Roche Inc., Nutley, NJ 07110-1199, USA.
SOURCE: Abstr.Pap.Am.Chem.Soc.; (1992) 203 Meet., Pt.2, I+EC116
CODEN: ACSRAL
DOCUMENT TYPE: Journal
LANGUAGE: English
AB **Protein** purification using a metal chelate **adsorbent** is a technique based on the **complexation** of **immobilized** metal ions and histidine residues on a **protein surface** . Histidine is a rarely-occurring **amino** acid, accounting for about 2% of the amino acid content of globular **proteins**, of which only about a half may be available for metal chelate affinity chromatography. This limits the utility of the technique for the purification of natural **proteins**, but is attractive for the purification of recombinant fusion **proteins** containing an artificial affinity tail. Gene fusion products have been created by fusing the coding sequence of a **protein** of interest with the

coding sequence of a peptide with high affinity for a ligand. The expressed fusion **protein** consisting of both the **target protein** and an affinity handle can be purified by affinity chromatography. A method for recombinant **protein** purification based upon metal chelate affinity chromatography, as well as recent applications of the system, were described. (0 ref)

L87 ANSWER 30 OF 42 BIOTECHDS COPYRIGHT 2004 THOMSON DERWENT/ISI on STN
ACCESSION NUMBER: 1986-03570 BIOTECHDS
TITLE: Polyaldehyde microspheres containing bound elemental transition metal;
use e.g. as enzyme **immobilization** support or chromatography **adsorbent**
PATENT ASSIGNEE: Yeda
PATENT INFO: EP 167834 15 Jan 1986
APPLICATION INFO: EP 1985-106996 5 Jun 1985
PRIORITY INFO: US 1984-618494 8 Jun 1984
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 1986-015173 [03]
AB Polyaldehyde microspheres to which a transition metal is bound are described. Optionally they are encapsulated in agarose. Preferably the polyaldehyde is polyacrolein or polyglutaraldehyde, and the metal, which may be magnetic or radioactive, is Au, Ag, Pt, Pd, Tc, Fe, Ni or Co. The microspheres may also contain a compound (A) having at least 1 primary **amino** group bound to its **surface**. These microspheres are useful for labeling and separating cells, or in diagnostic assays, and as catalysts, and for coating supports. (A) Are especially drugs, antibodies, antigens, enzymes or other **proteins**. The microspheres are treated with a transition metal acid or salt so that reduction by the aldehyde groups occurs. The reaction is preferably effected at pH 2-10 and at temperatures of up to 70 deg. Alternatively, the microspheres are first reacted at pH 3-11 and at up to 70 deg with compound (B) and able both to bind to the sphere and to the **complex** with the transition metal The metal is reduced with e.g. NaBH4. (B) Is e.g. deferoxamine. (37pp)

L87 ANSWER 31 OF 42 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1994:527052 BIOSIS
DOCUMENT NUMBER: PREV199497540052
TITLE: Use of psoralens for covalent **immobilization** of biomolecules in solid phase assays.
AUTHOR(S): Elsner, Henrik I. [Reprint author]; Mouritsen, Soren
CORPORATE SOURCE: M and E Lerso, Parkallee 40, 2100 Copenhagen, Denmark
SOURCE: Bioconjugate Chemistry, (1994) Vol. 5, No. 5, pp. 463-467. CODEN: BCCHES. ISSN: 1043-1802.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 15 Dec 1994
Last Updated on STN: 16 Dec 1994
ED Entered STN: 15 Dec 1994
Last Updated on STN: 16 Dec 1994
AB The ability of compounds to **adsorb** passively to hydrophobic polymer surfaces composed of, e.g., polystyrene generally is restricted to limited types of molecules such as **proteins**. Some **proteins**, many peptides, polysaccharides, oligonucleotides, and small molecules as well as pro- and eucaryotic cells cannot **adsorb** directly to such surfaces. Also, solid phase **adsorbed** antigens, antibodies, or gene **probes** may not be recognized by its corresponding ligand due to denaturation or steric hindrance of the molecular tertiary structure. Covalent binding, on the other hand, orientates all **immobilized** compounds in a defined way on the

solid phase, thereby exposing the interacting sites on the enzymes, antibodies, gene **probes**, etc. Here we describe a method for modifying a polymer surface by contacting the polymer with derivatives of psoralen under irradiation with long-wavelength UV light. The psoralen derivatives were **immobilized** covalently on the polymer surface by this process. The psoralen molecules was conjugated to appropriate chemical linkers, incubated in aqueous solutions, and irradiated with UV light. This resulted in solid phase introduction of functional groups such as, e.g., **amino** groups on the polystyrene **surface** . The functional groups could subsequently be used for **immobilization** of biomolecules using conventional cross-linker technology. The method only involved premodification of the psoralens to be **immobilized** whereas no pretreatment of the polymer was required. Psoralen modified microtiter plates seems to have future application for the development of solid phase hybridization and immunoassays.

L87 ANSWER 32 OF 42 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 2001-496744 [54] WPIDS
DOC. NO. NON-CPI: N2001-368088
DOC. NO. CPI: C2001-149188
TITLE: **Immobilizing** affinity reagents on a solid phase, for preparing analyte detection kits, comprises activating **carboxy** groups on a solid **surface** then coupling.
DERWENT CLASS: B04 D16 S03
INVENTOR(S): BABIN, F; HAMON, L; RIEUNIER, F
PATENT ASSIGNEE(S): (BIRA) BIO-RAD PASTEUR; (SNFI) PASTEUR SANOFI DIAGNOSTICS SA; (BABI-I) BABIN F; (HAMO-I) HAMON L; (RIEU-I) RIEUNIER F
COUNTRY COUNT: 95
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2001051927	A1	20010719	(200154)*	FR	29
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW					
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW					
FR 2803913	A1	20010720	(200154)		
AU 2001031885	A	20010724	(200166)		
EP 1247096	A1	20021009	(200267)	FR	
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR					
JP 2003523503	W	20030805	(200353)		35
US 2004052797	A1	20040318	(200421)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2001051927	A1	WO 2001-FR95	20010112
FR 2803913	A1	FR 2000-376	20000113
AU 2001031885	A	AU 2001-31885	20010112
EP 1247096	A1	EP 2001-903931	20010112
		WO 2001-FR95	20010112
JP 2003523503	W	JP 2001-552089	20010112
		WO 2001-FR95	20010112
US 2004052797	A1	WO 2001-FR95	20010112

US 2002-181090 20021112

FILING DETAILS:

PATENT NO	KIND	PATENT NO
AU 2001031885	A Based on	WO 2001051927
EP 1247096	A1 Based on	WO 2001051927
JP 2003523503	W Based on	WO 2001051927

PRIORITY APPLN. INFO: FR 2000-376 20000113
ED 20010924
AB WO 200151927 A UPAB: 20010924
NOVELTY - **Immobilizing** an affinity reagent (I) on a hydrophobic solid phase, functionalized by carboxy groups comprises activating the solid phase by treatment with a mixture of carbodiimide (II) and phosphate buffer, in the presence of a co-activator (III) and in acidic medium, and then coupling with (I) in basic medium.
DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a **complex** solid reagent (A) prepared by the new method.
USE - The method is used to prepare solid-phase reagents for use in immunoassays, hybridization or enzymatic test kits, and for detection or determination of analytes.
ADVANTAGE - Use of (II) in phosphate buffer provides reproducible control and optimization of covalent coupling, with effectively complete elimination of passive **adsorption**.
Dwg.0/3

L87 ANSWER 33 OF 42 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 2001-147356 [15] WPIDS
DOC. NO. CPI: C2001-043662
TITLE: Producing nucleic acid array for use in hybridization reactions, by employing **adsorptive**, non-covalent attachment of **nucleic acids** and oligonucleotide **probes** to positively charged solid surfaces.
DERWENT CLASS: A89 B04 D16
INVENTOR(S): BELOSLUDTSEV, Y
PATENT ASSIGNEE(S): (GENO-N) GENOMETRIX GENOMICS INC
COUNTRY COUNT: 91
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2001006011	A2	20010125	(200115)*	EN	46
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW					
W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW					
AU 2000060933	A	20010205	(200128)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2001006011	A2	WO 2000-US19045	20000712
AU 2000060933	A	AU 2000-60933	20000712

FILING DETAILS:

PATENT NO	KIND	PATENT NO
AU 2000060933	A Based on	WO 2001006011

PRIORITY APPLN. INFO: US 1999-143926P 19990714
ED 20010317
AB WO 200106011 A UPAB: 20011129
NOVELTY - Producing an array of discrete biosites comprising non-covalently attached **nucleic acids** is new.
DETAILED DESCRIPTION - A method of producing an array of discrete biosites comprising non-covalently attached **nucleic acids** (NA) comprises:
(a) providing a solid surface (SS) with a positive charge or coated with a composition with a positive charge;
(b) providing at least one solution comprising a negatively charged nucleic acid;
(c) depositing a solution of (b) onto a discrete biosite on the solid support of (a) where NA are non-covalently attached to SS by electrostatic attraction between the opposite charges; and
(d) SS is then contacted with a composition (C) that neutralizes most of the positive charge on SS not associated with the non-covalently attached NA.
INDEPENDENT CLAIMS are also included for the following:
(1) a NA array (I) comprising a solid surface comprising several discrete biosites comprising a non-covalently associated NA produced by the above method; and
(2) a method for determining if NA in a test sample can hybridize to NA **immobilized** onto an array, by contacting the test sample comprising NA with (I) and determining if a NA in the test sample hybridizes to a NA **immobilized** onto an array.
USE - The method is useful for producing an array comprising non-covalently attached nucleic acid **probes**, for use in hybridization reactions.
ADVANTAGE - The affinity and selectivity of the non-covalently **immobilized probe** to sample **target** duplex formation is excellent and compact to conventional methods and unlabeled **probes** are applied at the concentration which is at least five times lower than required for conventional methods.
Dwg.0/2

L87 ANSWER 34 OF 42 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 2001-266833 [28] WPIDS
DOC. NO. NON-CPI: N2001-190836
DOC. NO. CPI: C2001-080964
TITLE: Covalent **immobilization** of **biopolymers**, useful for studying e.g. gene expression, by coupling amino group on **biopolymer** to reactive group on substrate.
DERWENT CLASS: B04 D16 S03
INVENTOR(S): ANSORGE, W; FAULSTICH, K
PATENT ASSIGNEE(S): (EMBL-N) EMBL EURO LAB MOLEKULARBIOLOGIE
COUNTRY COUNT: 95
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
DE 10016073	A1	20010301	(200128)*		12
WO 2001014585	A1	20010301	(200128)	GE	

RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC

LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE
SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
AU 2000074119 A 20010319 (200136)
EP 1212466 A1 20020612 (200239) GE
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT
RO SE SI

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
DE 10016073	A1	DE 2000-10016073	20000331
WO 2001014585	A1	WO 2000-EP8193	20000822
AU 2000074119	A	AU 2000-74119	20000822
EP 1212466	A1	EP 2000-962356	20000822
		WO 2000-EP8193	20000822

FILING DETAILS:

PATENT NO	KIND		PATENT NO
AU 2000074119	A	Based on	WO 2001014585
EP 1212466	A1	Based on	WO 2001014585

PRIORITY APPLN. INFO: DE 1999-19940077 19990824
ED 20010522
AB DE 10016073 A UPAB: 20010522
NOVELTY - Covalent **immobilization** of **biopolymers** (I)
on a solid phase having, on at least part of its **surface**,
amino reactive groups (halo, aldehyde, epoxy, iso(**thio**
)cyanate), by reacting the **surface** with (I) containing reactive
amino groups. The solid phase is a metal and/or oxide phase.
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the
following:
(a) solid phase, with **immobilized** (I), of formula (III)
Z-(CH2)n-Y-X-NS (III);
(b) device for studying a hybridization-based interaction between
free and **immobilized** (I) comprising the new solid phase, at
least one hybridization **probe**, hybridization buffer and
hybridization chamber, optionally with a pumping and temperature control
system;
(c) method for simultaneous amplification and labeling of cDNA by
reverse transcription of RNA, without introduction of a label, then
simultaneous amplification and labeling of cDNA using a labeled
deoxynucleoside triphosphate and optionally purification of the labeled
cDNA;
(d) method for **immobilizing** (I) on a solid phase having
reactive amino groups over at least part of its surface by stable
(non-)covalent interaction of (I) with these groups;
(e) solid phase with **immobilized** (I) of formula (V)
ZO-Si(O-)2-(CH2)n-NH-(CH2)m-NH2.....NS (V) where the dotted line
indicates covalent or non-covalent interaction; and
(f) method for separating the strands of double-stranded nucleic
acid, according to sequence, in which one strand includes at least one
5'-amino-modified nucleotide.
Z = solid phase;
NS = nucleic acid;
X = bond or linker, linked to the terminal residue of NS;
Y = -N=CH-(CH2)m-CH=N-, -NH-CH2-(CH2)m-CH2-NR1-, -NR1-, -NH-CQ-NHR',
-NHCQ-NR'-, -CH(OH)-CH2-NR1- or the group (i)
Q = O or S;
Q' = Cl or OH;

R1 = H or 1-6C alkyl;
R' = alkylene or arylene;
n = 0 or integer; and
m = 1-20.

USE - Solid phases derivatized with an array of (I) are used to study interactions between free and bound (I), particularly **nucleic acids** but also interactions involving **proteins**, lipids and carbohydrates. Particular applications are nucleic acid sequencing; studying expression/function of genes and metabolites; identifying new pharmaceuticals (and their activity and side effects); detecting genetically modified foods, and identification of mutations.

ADVANTAGE - This method of **immobilizing** (I) is effective and simple and, unlike the standard method of **adsorption** on polylysine, can accommodate **nucleic acids** of any length; has high binding capacity (some hundreds of femtomoles per square mm) and when hybridization involves a 5'-amino-modified **probe**, binding to **immobilized** (I) is easily reversed, allowing reuse of the solid phase.

Dwg.0/0

L87 ANSWER 35 OF 42 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 2000-337936 [29] WPIDS
DOC. NO. CPI: C2000-102489
TITLE: Reagent for analyzing biomolecules, useful e.g. as gene sensor, comprises carboxylated poly vinylidene fluoride support with attached biomolecules.
DERWENT CLASS: A96 B04 D16
INVENTOR(S): MATSON, R S
PATENT ASSIGNEE(S): (BECI) BECKMAN COULTER INC
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
US 6037124	A	20000314	(200029)*		17

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
US 6037124	A	US 1996-720307	19960927

PRIORITY APPLN. INFO: US 1996-720307 19960927
ED 20000617
AB US 6037124 A UPAB: 20000617
NOVELTY - Reagent (A) for analyzing biomolecules (I) comprises a carboxylated poly(vinylidene fluoride) (cPVF) support with **surface carboxy** groups, carrying **immobilized** biomolecule, i.e.
(i) an oligonucleotide (ON) **probe** (II), attached covalently or
(ii) at least one binding **protein** (III), attached non-covalently.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for analysis of **target** (I) using (A).

USE - (A) are useful as gene sensors and in other array-based analyses, e.g. for detection of mutant and wild-type DNAs associated with infectious or genetic diseases.

ADVANTAGE - (I) can be attached to cPVF at high density and with low background fluorescence and non-specific **adsorption**. Many **probes** can be attached to a single support, allowing multiple assays to be performed simultaneously.

Dwg.0/6

L87 ANSWER 36 OF 42 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 1997-257690 [23] WPIDS
DOC. NO. CPI: C1997-083190
TITLE: **Immobilisation** of amine compounds on platinum surface - after activation with isocyanate or isothiocyanate.
DERWENT CLASS: B04 D16 J04
INVENTOR(S): VARMA, R S
PATENT ASSIGNEE(S): (HOUS-N) HOUSTON ADVANCED RES CENT
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
US 5622826	A	19970422	(199723)*		24

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
US 5622826	A	US 1994-362264	19941222

PRIORITY APPLN. INFO: US 1994-362264 19941222
ED 19970606
AB US 5622826 A UPAB: 19970606
Method for **immobilising** a molecule containing an **amino** group on a platinum **surface** comprises reacting the surface with an isocyanate or isothiocyanate to produce **immobilised** reactive groups, and reacting these with the molecule.
USE - The method is useful especially for **immobilising** amine-derivatised **nucleic acids** for use in novel biosensor devices.
ADVANTAGE - Oligonucleotide(s) **immobilised** as above under optimum conditions (10-20 mu M, 25 deg. C, 15-20 min) retain the ability to hybridise to complementary **target** sequences with minimal non-specific **adsorption**.
Dwg.0/13

L87 ANSWER 37 OF 42 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 1990-348421 [46] WPIDS
DOC. NO. CPI: C1990-151229
TITLE: Purifying **protein** having **surface** metal-binding **amino** acid residues - using an **immobilised** metal affinity chromatography resin.
DERWENT CLASS: B04 D16
INVENTOR(S): PARGELLIS, C A; STAPLES, M A
PATENT ASSIGNEE(S): (BIOJ) BIOGEN INC
COUNTRY COUNT: 20
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 9012803	A	19901101	(199046)*		
RW: AT BE CH DE DK ES FR GB IT LU NL SE					
W: AU CA FI JP KR NO US					
AU 9055457	A	19901116	(199107)		
EP 467992	A	19920129	(199205)		
R: AT BE CH DE ES FR GB IT LI LU NL SE					
JP 04504720	W	19920820	(199240)		35
US 5169936	A	19921208	(199252)		13

EP 467992 A4 19930428 (199526)

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
EP 467992	A	EP 1990-908049	19900412
JP 04504720	W	JP 1990-506788	19900412
		WO 1990-US1991	19900412
US 5169936	A	US 1989-338991	19890414
EP 467992	A4	EP 1990-908049	

FILING DETAILS:

PATENT NO	KIND	PATENT NO
JP 04504720	W Based on	WO 9012803

PRIORITY APPLN. INFO: US 1989-338991 19890414
ED 19930805
AB WO 9012803 A UPAB: 19930928
A process for purifying a **protein** having **surface** metal-binding **amino** acid residues is claimed comprising (a) contacting a soln. contg. the **protein** with an **immobilised** metal affinity chromatography (IMAC) resin, comprising a matrix resin linked to a bidentate chelator bound to divalent metal ions, in a binding buffer contg. salt and a weak ligand for the metal ions and (b) selectively eluting the **protein** using a buffer contg. salt and a higher concn. of the weak ligand than in the binding buffer.

Pref. the weak ligand is tris and the binding buffer is 0.01-0.1 M tris. HCl buffer opt. contg. 0.15 M NaCl and the elution buffer is 0.1-0.5 M Tris. HCl buffer opt. contg. 0.15 M NaCl. Pref. the bidentate chelator is iminodiacetic acid (IDA) and the divalent metal ion is Cu(2+).

USE/ADVANTAGE - The process can produce yields of **proteins** such as recombinant soluble T4 (rsT4), IgG, haptoglobin, hemopexin, Gc-globulin, Clq, C3, C4, human ceruloplasmin, Dolichos biflorus lectin, Zn-inhibited Tyr (P) phosphatases, phenolase, carboxypeptidase isoenzymes, human Cu-Zn superoxide dismutase, nucleoside diphosphatase, leukocyte interferon, fibroblast interferon, immune interferon, lactoferrin, human plasma alpha2-SH glycoprotein, alpha2-macroglobulin, alpha,-antitrypsin, plasminogen activator, gastrointestinal **polypeptides**, pepsin, human and bovine serum albumin, granule **proteins** from granulocytes and lysozymes, non-histone **proteins**, human fibrinogen, human serum transferrin, human lymphotoxin, calmodulin, **protein** A, avidin, myoglobins, somatomedins, human growth hormone, transforming growth factors, platelet-derived growth factor, alpha-human atrial natriuretic **polypeptide** and cardiodilatin.
0/4

L87 ANSWER 38 OF 42 USPATFULL on STN
ACCESSION NUMBER: 2004:69995 USPATFULL
TITLE: Nanoparticle polyanion conjugates and methods of use thereof in detecting analytes
INVENTOR(S): Storhoff, James J., Evanston, IL, UNITED STATES
Letsinger, Robert L., Bloomington, IN, UNITED STATES
Hagenow, Susan R., Salem, WI, UNITED STATES
PATENT ASSIGNEE(S): Nanosphere, Inc. (U.S. corporation)

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 2004053222	A1	20040318	
APPLICATION INFO.:	US 2003-612422	A1	20030702	(10)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2002-393255P	20020702 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: Emily Miao, McDonnell Boehnen Hulbert & Berghoff, 32nd Floor, 300 S. Wacker Drive, Chicago, IL, 60606
NUMBER OF CLAIMS: 50
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 6 Drawing Page(s)
LINE COUNT: 1179
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB This invention provides polyanionic polymer conjugates containing non-nucleotide polyanionic polymers that are useful in detecting target analytes such as proteins or small molecules. The invention also provides nanoparticles bound to polyanionic polymer conjugates and methods of preparation and use thereof. The polyanionic polymer conjugates have the formula:

L--O--[PO.sub.2--O--Z--O].sub.n--PO.sub.2--O--X

wherein n ranges from 1 to 200; L represents a moiety comprising a functional group for attaching the polyanion polymer to the nanoparticle surface; Z represents a bridging group, and X represents Q, X' or --Q--X', wherein Q represents a functional group for attaching a recognition probe to the polyanion polymer, and X' represents a recognition probe.

L87 ANSWER 39 OF 42 USPATFULL on STN
ACCESSION NUMBER: 2003:251042 USPATFULL
TITLE: Signal amplification by Hybrid Capture
INVENTOR(S): Lazar, James G., Bethesda, MD, UNITED STATES

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 2003175828	A1	20030918	
APPLICATION INFO.:	US 2002-98851	A1	20020315	(10)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: MORGAN & FINNEGAN, L.L.P., 345 Park Avenue, New York, NY, 10154-0053
NUMBER OF CLAIMS: 46
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 9 Drawing Page(s)
LINE COUNT: 1552
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The methods of the invention relate to signal amplification for assays detecting a particular target analyte. Amplification is accomplished by utilizing one or more binding partner pairs to generate signal amplification. The present invention concerns a method to improve detection or quantitation of a target analyte in a sample by amplifying the detector signal which comprises reacting a target analyte with a conjugate consisting of a detectably labeled substrate specific for the enzyme system, said conjugate reacts with the analyte dependent enzyme activation system to form an activated conjugate which deposits substantially wherever receptor for the activated conjugate is immobilized, said receptor not being reactive with the analyte dependent enzyme activation system. In another embodiment the invention concerns an assay for detecting the presence or absence of a target analyte in a sample to amplify the reporter signal.

L87 ANSWER 40 OF 42 USPATFULL on STN
ACCESSION NUMBER: 2003:140432 USPATFULL
TITLE: Methods for immobilizing molecules to a solid phase and uses thereof
INVENTOR(S): Gagna, Claude, Old Westbury, NY, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003096273	A1	20030522
APPLICATION INFO.:	US 2002-209849	A1	20020731 (10)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2001-308936P	20010731 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: FULBRIGHT & JAWORSKI, LLP, 666 FIFTH AVE, NEW YORK, NY, 10103-3198
NUMBER OF CLAIMS: 45
EXEMPLARY CLAIM: 1
LINE COUNT: 1842
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Various methodologies for the immobilization of molecules such, as multistranded nucleic acid molecules, are described. The methodologies include activation of solid supports, as well as treatment of, e.g. termini of nucleic acid molecules to render them more receptive to immobilization on surfaces.

L87 ANSWER 41 OF 42 USPATFULL on STN
ACCESSION NUMBER: 2002:307820 USPATFULL
TITLE: Device and method of use for detection and characterization of pathogens and biological materials
INVENTOR(S): Henderson, Eric R., Ames, IA, UNITED STATES
Nettikadan, Saju R., Ames, IA, UNITED STATES
Mosher, Curtis L., Ames, IA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2002172943	A1	20021121
APPLICATION INFO.:	US 2002-160372	A1	20020530 (10)

RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 2000-519271, filed on 7 Mar 2000, PENDING Continuation-in-part of Ser. No. US 2000-574519, filed on 18 May 2000, PENDING
DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: Scott A. Marks, DORSEY & WHITNEY LLP, Suite 1500, 50 South Sixth Street, Minneapolis, MN, 55402-1498
NUMBER OF CLAIMS: 40
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 8 Drawing Page(s)
LINE COUNT: 670
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention includes a method and apparatus for the detection of a target material. The method and apparatus includes providing a substrate with a surface and forming a domains of deposited materials thereon. The deposited material can be placed on the surface and bound directly and non-specifically to the surface, or it may be specifically or non-specifically bound to the surface. The deposited material has an affinity for a specific target material. The domains thus created are termed affinity domains or deposition domains. Multiple affinity domains of deposited materials can be deposited on a single surface, creating a plurality of specific binding affinity domains for a plurality of target

materials. Target materials may include, for example, pathogens or pathogenic markers such as viruses, bacteria, bacterial spores, parasites, prions, fungi, mold or pollen spores. The device thus created is incubated with a test solution, gas or other supporting environment suspected of containing one or more of the target materials. Specific binding interactions between the target materials and a particular affinity domain occurs and is detected by various methods.

L87 ANSWER 42 OF 42 USPATFULL on STN

ACCESSION NUMBER:	2002:43173 USPATFULL
TITLE:	Methods for preparing conjugates
INVENTOR(S):	Dellinger, Douglas J., Sunnyvale, CA, UNITED STATES Myerson, Joel, Berkeley, CA, UNITED STATES Fulcrand, Geraldine, Sunnyvale, CA, UNITED STATES Ilsley, Diane D., San Jose, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2002025539	A1	20020228
APPLICATION INFO.:	US 2001-981580	A1	20011017 (9)
RELATED APPLN. INFO.:	Division of Ser. No. US 1999-397526, filed on 16 Sep 1999, PENDING		
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	APPLICATION		
LEGAL REPRESENTATIVE:	AGILENT TECHNOLOGIES, INC., Legal Department, DL429, Intellectual Property Administration, P. O. Box 7599, Loveland, CO, 80537-0599		
NUMBER OF CLAIMS:	45		
EXEMPLARY CLAIM:	1		
NUMBER OF DRAWINGS:	2 Drawing Page(s)		
LINE COUNT:	1750		

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Methods are disclosed for conjugating one moiety to another moiety. In the method the moieties are reacted with one another in a protic solvent. Reaction between the moieties and the protic solvent during the conjugating is negligible or reversible. A stable bond is formed between the moieties to produce a product that is not subject to .beta.-elimination at elevated pH. Usually, one of the moieties comprises an unsaturation between two carbon atoms. One of the carbon atoms is or becomes an electrophile during the conjugating. The other of the moieties comprises a functionality reactive with the electrophile carbon atom to form a product that comprises the unsaturation. Compounds comprising both of the moieties as well as precursor molecules are also disclosed. Methods are also disclosed for determining an analyte in a sample employing compounds as described above.

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